25 Cents

March 1951

Vol. 78 • No. 3

THE LUMBERMAN

Since 1889

SEATTLE-PORTLAND
SAN FRANCISCO-NEW ORLEANS
VANCOUVER, B.C.-NEW YORK
CHICAGO-LOS ANGELES

Editorial Index page 67

The Production Journal of the Forest Industries

Get a load of this

...FOR LONG ROPE SERVICE IN FOREST AND MILL

When it's time to switch logging ropes, be ready with tough, flexible *Preformed* Yellow Strand. It's engineered to take shocks and abrasion . . . to withstand high speeds . . . to handle the increased lengths and weights required for high board-foot production. On most skidding and loading equipment—both aerial and ground systems—you'll want 6x19 *Preformed* Yellow Strand with independent wire rope core. Other B & B lines bring stout fatigue-resistance to road-building and sawmill operations. Get a load of this assistance by specifying *Preformed* Yellow Strand.

Broderick & Bascom Rope Co., St. Louis 15, Mo.

BRODERICK & BASCOM
Yellow Strand
PREFORMED WIRE ROPE

Factories: SEATTLE, St. Louis, Peoria, Houston

Branches: SEATTLE, Portland, San Francisco, Los Angeles, Houston, Chicago, New York

Distributors in All Logging Areas

The woods are full of them

Modern loggers use modern tools for high, efficient production. The woods are full of McCulloch chain saws *only* because their light weight, easy handling, and fast cutting pay off on the balance sheet.

***FACTS* are hard to beat!** Actual weight of the McCulloch 3-25 chain saw, with 18-inch blade and chain, is 25 pounds. Actual weight of the 5-49, with 20-inch blade and chain, is 49 pounds. The 3-25 develops 3 honest horsepower, the 5-49 develops more than 5. Both have automatic clutches, automatic-rewind starters —and both operate at full power in any position.

These saws earned their reputation by performance in the woods! Ask your dealer to show you how and why.

NATIONWIDE SALES AND SERVICE

3-25
Blades 18 to 30 inches and 15-inch bow. Priced from $325, f. o. b. Los Angeles
5-49
Blades 20 to 60 inches and 20-inch bow. Priced from $415, f. o. b. Los Angeles
Send for free literature and name of nearest dealer

McCULLOCH

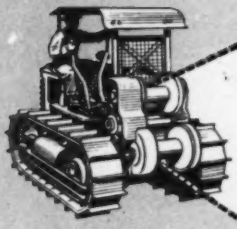
World's Largest Builder of Power Chain Saws

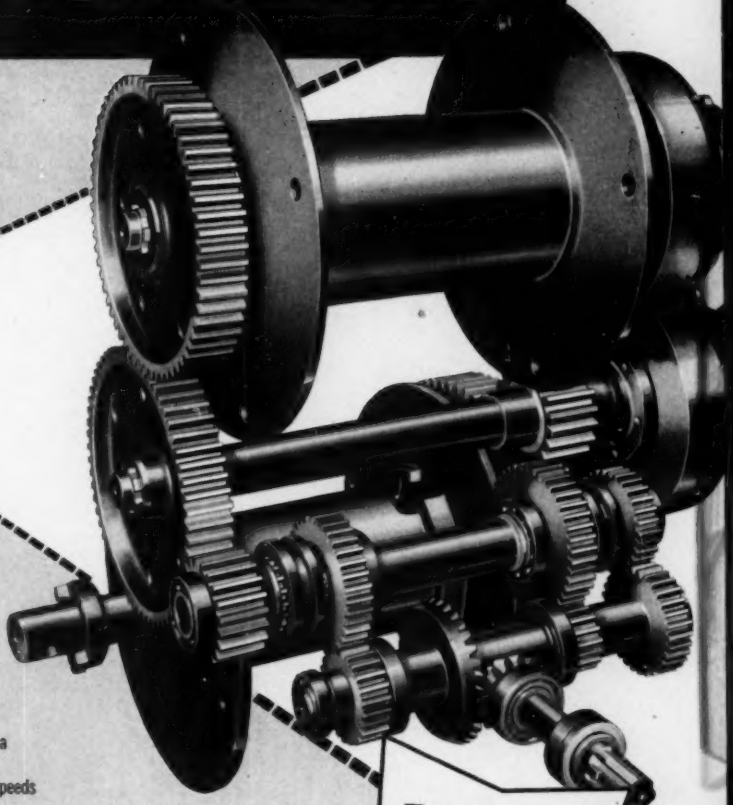
McCULLOCH MOTORS CORPORATION
Los Angeles 45, California

Export Department: 301 Clay Street, San Francisco 11, California, U. S. A.

The Lumberman is published monthly at 71 Columbia St., Seattle, Wash. Annual subscription, $2.00; Foreign, $3.00; News-stand, 25c. Entered as second class matter April 1, 1935, at the Post Office at Seattle, under the Act of March 3, 1879.

CARCO-FIRST IN WINCH ENGINEERING





Design leadership in tractor winches has been the constant goal of Carco engineers for 20 years. Anti-friction bearings were an early "first." Then unit cast, oil-tight cases, oil-bath lubrication, outstanding accessibility for maintenance and a wider range of gear ratios for variable line speeds and pulls. Now enclosed cable controls for cleaner installation, eliminating exposed rods and linkage, and streamlined cases of Carcometal. Models for ALL leading makes of tractors.

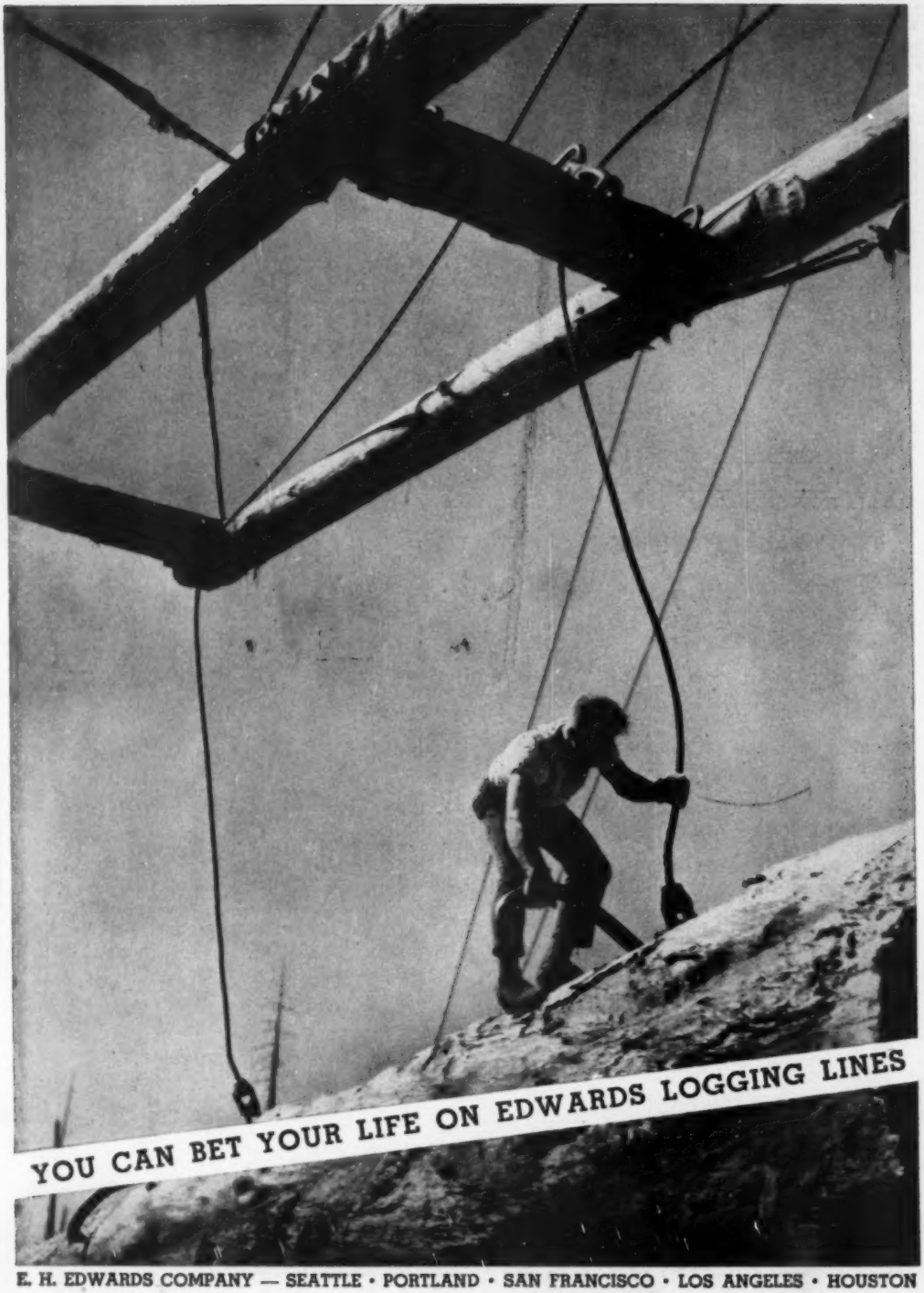
Good design has meant better value to owners; owner preference has made Carco first in tractor winch production. Pacific Car and Foundry Company: factory, Renton, Washington; warehouse, Portland, Ore.; eastern sales and warehouse, Franklin Park, Ill.

1st in Volume-
1st in Value!

CARCO

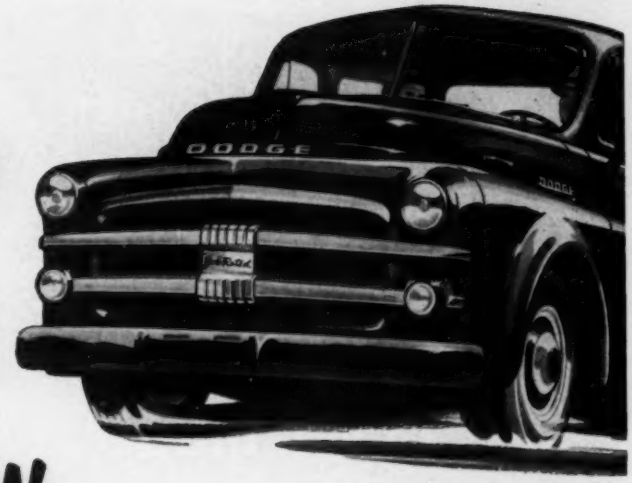
Winches for all makes of tractors

®



E. H. EDWARDS COMPANY — SEATTLE • PORTLAND • SAN FRANCISCO • LOS ANGELES • HOUSTON

"Job-Rated" for LUMBERMEN



Brand new DODGE "Job-Rated" TRUCKS

The trucks that do the most for you!

More than 50 BRAND-NEW improvements . . . including

NEW! SMOOTHER RIDE with new, "Oriflow" shock absorbers—standard equipment on ½-, ¾-, and 1-ton models.

NEW! EASIER LOADING with lower ground-to-floor height—on all models through 2 tons.

NEW! EASIER BAD-WEATHER STARTING with new moistureproof ignition and high-torque starting motor.

NEW! MORE ECONOMICAL PERFORMANCE with higher (7.0 to 1) compression ratio—on all models through 1 ton.

NEW! SMOOTHER ENGINE IDLING with "hotter" spark plugs; on all models through 1 ton.

BRAND-NEW POWER—You get more power than ever—engineered for *your* job! Eight great engines—with net horsepower stepped up as much as 20%! You get more of the *right* power for your needs—with top economy! Yet, with all their extra value, new Dodge *"Job-Rated"* trucks are priced with the lowest.

BRAND-NEW EASE-OF-HANDLING—You can turn new Dodge *"Job-Rated"* trucks sharper . . . maneuver them more easily. New shorter turning diameters! New worm-and-roller steering gears! All this—plus cross-steering, wide front tread and short wheelbase.

BRAND-NEW BRAKING SAFETY—New Dodge *"Job-Rated"* trucks are the trucks with new molded, tapered Cyclebond brake linings! New *extra-quiet* action! New extra-smooth, extra-sure stopping! New longer lining life! (On new 1½-ton and up trucks, except air brake models.)

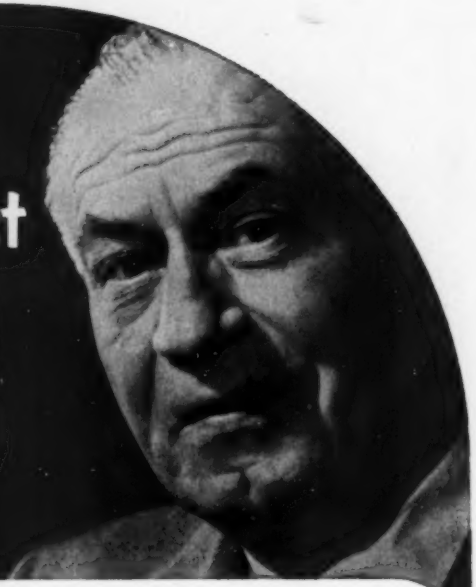
PLUS THIS EXCLUSIVE! Gyrol Fluid Drive available on ½-, ¾-, and 1-ton, and Route-Van trucks.

See your Dodge Dealer today for

THE TRUCK THAT FITS YOUR JOB... A DODGE "Job-Rated" TRUCK

"The Soundest Investment I Ever Made

. . . AND MY RECORDS PROVE IT!"



THE BEST BRAKE IS AIR

Logging men, like all practical businessmen, know a good investment when they see it. That's why you'll find their trucks equipped with Bendix-Westinghouse Air Brakes. These old hands in the logging business know from experience that these mighty brakes really pay off—*with interest!* Extra safety, positive braking control and faster trip speeds are only part of it. Of equal importance are the remarkable savings—savings on maintenance and parts replacement costs and in reduced down-time—savings that mean *more* profits. It's easy to take advantage of these extra dividends. Just remember, whether on old trucks or new, be sure to specify dependable, economical Bendix-Westinghouse Air Brakes—world's safest power-to-stop!

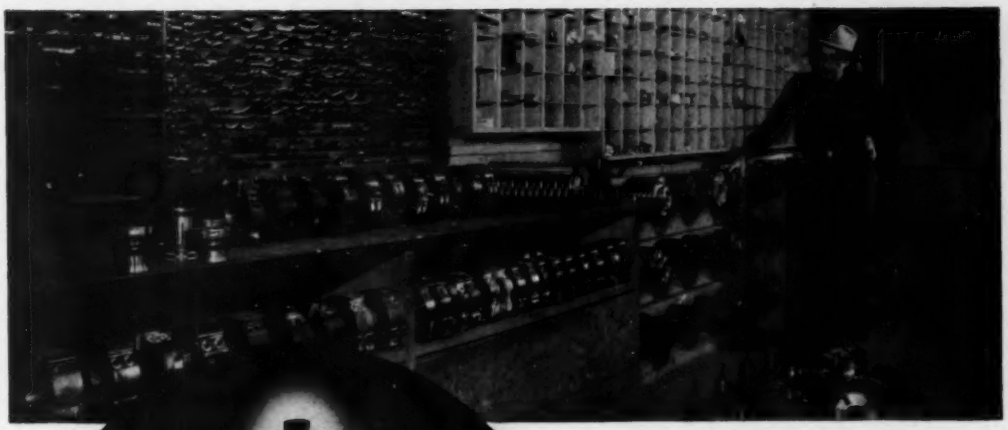
BENDIX-WESTINGHOUSE GENUINE AIR BRAKES

REG. U.S. PAT. OFF.

THE BEST AIR BRAKE IS

Bendix-Westinghouse

BENDIX-WESTINGHOUSE AUTOMOTIVE AIR BRAKE COMPANY
ELYRIA, OHIO



"I've found DISSTON *Philbrick.* CUTTER HEADS *the best!"*

...says Si Hannon—a man who really knows cutter heads. He's been in the milling business since 1916; today, he's the owner of Mutual Moulding . . . one of the oldest custom milling plants in Los Angeles. It's of real significance, then, that Si Hannon uses Disston products throughout his plant. In the photo above, you see him with some of the more than 80 Disston Philbrick Heads equipped with Disston Knives used in his operation.

NOW—BETTER THAN EVER WITH *PRECISION-GROUND* BEARING SURFACES! Get better performance—accuracy and working ease! Now, Disston Philbrick Cutter Heads are precision ground—to .0001 (one ten-thousandth) of an inch—on head bores, on inside and outside of sleeves, on all bearing surfaces between the machine spindle and head, insuring more accurate work! You save money by saving downtime!

Grinding precision finish on bore of Disston Philbrick Cutter Head. Machines used for this grinding are the most modern and accurate of their type.

DISSTON PHILBRICK CUTTER HEADS

GENERATED (MILLED TO PATTERN) TYPE

produce more — more efficiently!

Consider the flexibility! Work a wide variety of patterns with each pair of Disston Philbrick head bodies. Knife changes are quick, simple. No holders, clamps, gibs—no trouble. Save manpower, downtime, material!

Longer Life! Disston Philbrick alloy heads are specially heat-treated to last longer!

Faster feeds, heavier cuts! Thicker knives, greater throat room eliminate overloading and clogging with shavings. Heads pull easily—produce smoother work!

For smoother finish, more footage, lower investment and operating costs—DISSTON PHILBRICK CUTTER HEADS!

HENRY DISSTON & SONS, INC.
393 Tacony, Philadelphia 35, Pa., U.S.A.
Canadian Factory: 2-20 Fraser Ave., Toronto 3, Ont.

Now we're loggin' in a *hurry!*

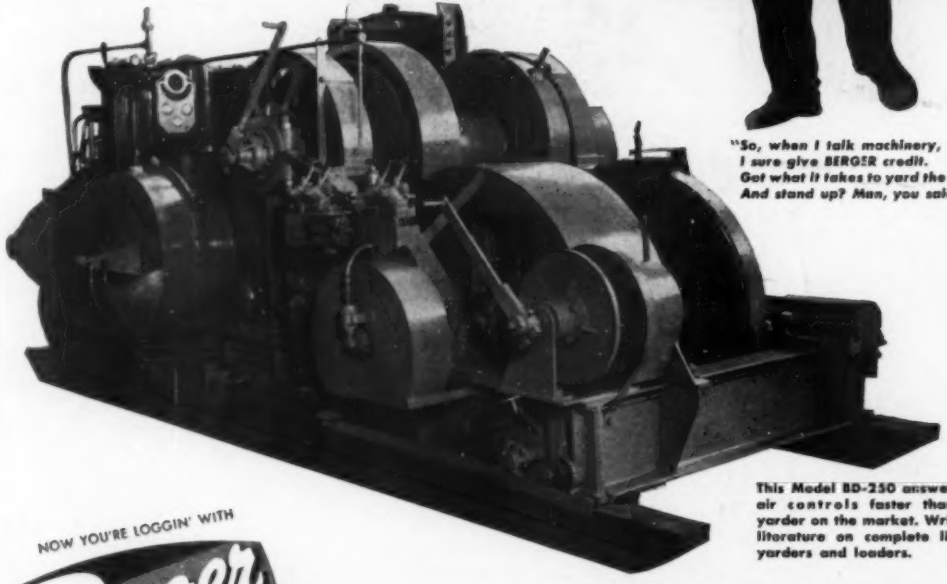
"We've gotta get a hump on these days. The logs have got to come in lively and load out the same way.

"Such logging calls for machinery and equipment that has both suitability and stamina. The sort of qualities that make BERGER Yarders and Loaders and BERGER Blocks and Carriages what a yarder boss wants.

"They're rugged and simple and job-engineered. They're easy on rope. Their bearings are properly lubricated and sealed against wind, dust and moisture.

"What I like, too, they're built to please the man who runs, rigs, or services them — not some swivel-chair engineer. Yes sir, BERGER machinery and equipment is for working men, as well as work."

"So, when I talk machinery,
I sure give BERGER credit.
Got what it takes to yard the logs,
And stand up? Man, you said it!"



This Model BD-250 answers her air controls faster than any yarder on the market. Write for literature on complete line of yarders and loaders.

NOW YOU'RE LOGGIN' WITH

Berger

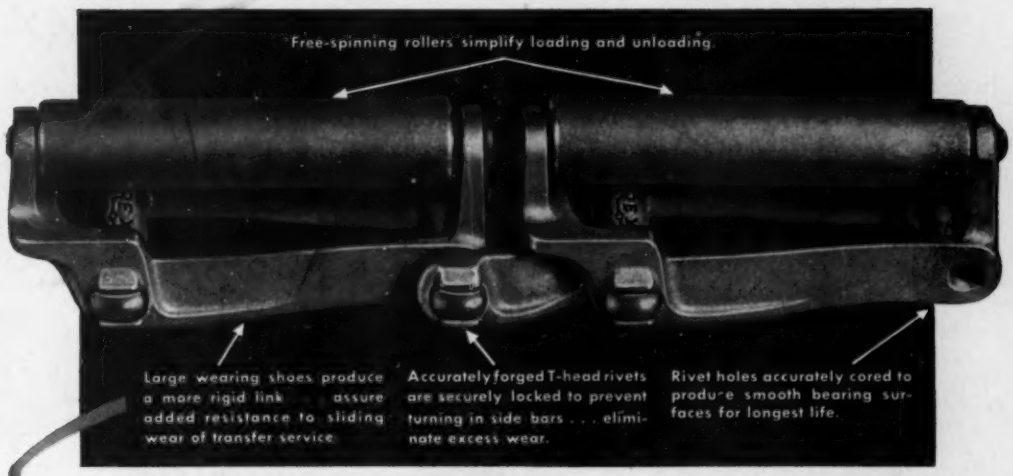
Loaders . . . Yarders . . . Fairleaders . . . Blocks . . . Air Tongs . . . Air Valves . . . Loading Booms

Tops in Performance — Tops in Lasting Values

BERGER ENGINEERING COMPANY

3236 SIXTEENTH AVENUE S. W. · SEATTLE 4, WASHINGTON, U. S. A.

Easy TO LOAD Easy TO UNLOAD


Free-spinning rollers simplify loading and unloading.
Large wearing shoes produce a more rigid link . . . assure added resistance to sliding wear of transfer service.
Accurately forged T-head rivets are securely locked to prevent turning in side bars . . . eliminate excess wear.
Rivet holes accurately cored to produce smooth bearing surfaces for longest life.

REX ROLLER TOP TRANSFER CHAINS

It's easy to load and unload lumber on Rex Roller Top Transfer Chains. Free-spinning rollers are a big time and labor saver on sorting tables and transfer conveyors.

There's no need to "tug" green or finished lumber off the conveyor. It glides over the rollers with far less manual effort . . . more lumber can be handled during a working day. Since the lumber rolls off the conveyor rather than slides, there is less danger of damage.

The free-spinning rollers are mounted on links which couple with standard pitch Rex H-78 chain and operate on the same sprockets. That's a big help in your inventory since you do not need to stock special sprockets.

For all the facts on Rex Roller Top and the other Rex Quality Lumber Mill Chains, mail the coupon.

other Rex Quality Lumber Mill Chains

Rex H-Type Drive and Transfer Chain

Rex H-Type Conveyor Chain

Rex Steel Chabelco Chain

Rex Roof-Top Transfer Chain

Baldwin-Rex Roller Chain

CHAIN BELT COMPANY
1653 West Bruce Street
Milwaukee 4, Wis.

50-113

Gentlemen:

☐ Please send me my copy of Bulletin No. 50-27
☐ I would like to see a Rex Field Sales Engineer

Name.....

Company.....*Dept.*.....

Address.....

City.....*State*.....

CHAIN BELT REX COMPANY **Lumber Mill Chains**

CHAIN BELT COMPANY *of Milwaukee*

Let Chapman help you prevent sap stain and mold

Above is a typical dipping vat located on the green chain. Overhead rollers are used to force the freshly sawn lumber into the anti-stain solution as it passes through the vat.

Green timbers and larger dimension materials can be sprayed by passing stock on a roller conveyor through a spray box fitted with nozzle or perforated pipes.

At some large mills and concentration yards, an overhead crane system (as pictured above) is used to dip lumber in bulk packages. As much as a truckload at a time can be dipped by this fast and inexpensive method.

Call on us for recommendations on treating methods best suited to your operations.

Since 1933 Chapman Chemical Company has pioneered the control of sap stain and mold by inexpensive chemical treatments. Our field representatives have worked with large and small mills in developing economical and effective treating equipment and methods. All this experience is available to you without cost or obligation. Just phone or write us, and we'll gladly help solve your sap stain problem.

CHAPMAN™ **PERMATOX® 10-S**

An improved fungicide that prevents both sap stain and mold in hardwoods and softwoods.

CHAPMAN CHEMICAL COMPANY

333 No. Michigan Ave., Chicago 1, Illinois • Terminal Sales Bldg., Portland 5, Oregon

DERMON BUILDING, MEMPHIS 3, TENN.

Roads or Ruts—
Trucks Make Faster Time with

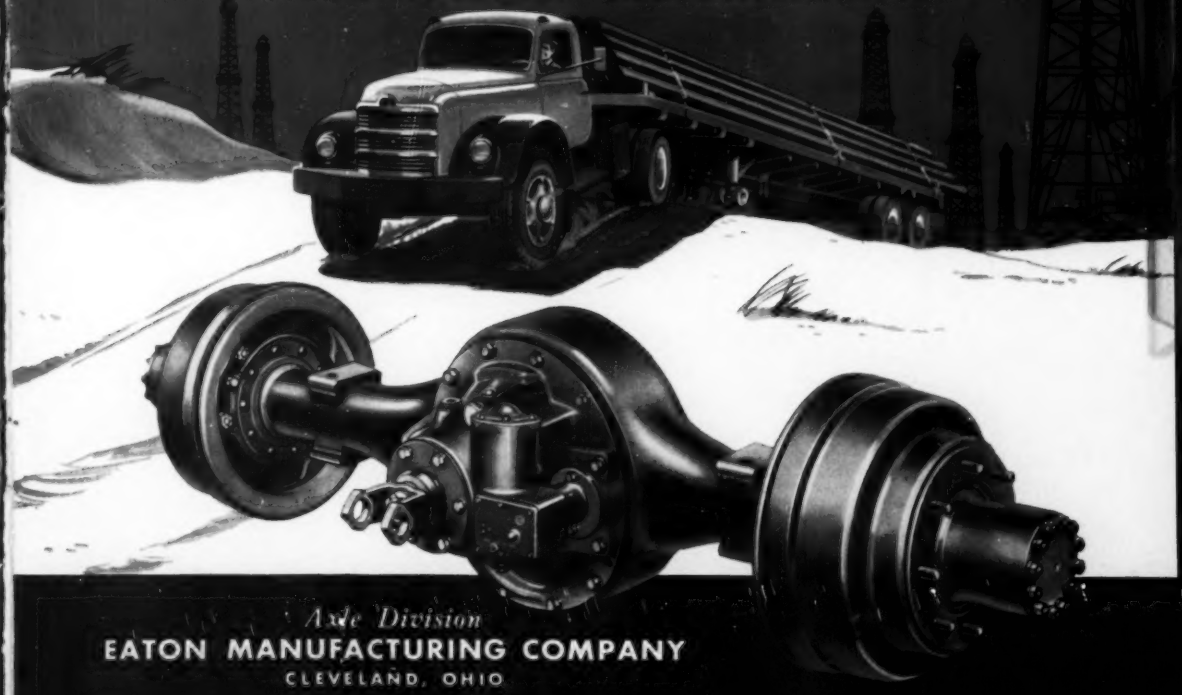
EATON

2-Speed Truck

AXLES

Truck operators who do most or all of their driving on poor roads find Eaton 2-Speed Axles almost indispensable. They need extra pulling power under such conditions—and Eaton gives it to them by doubling the conventional number of gear ratios. When roads are bad, when climbing stiff grades, or when starting under full load, drivers use "low low". When highballing, they make better time because they can shift into "high high". Between these two extremes, drivers have a choice of several ratios to meet the demands of road and load conditions.

And Eaton 2-Speed Axles last for the life of the truck, because of exclusive planetary gearing, positive lubrication, and other features which your truck dealer will be glad to show you.



Axle Division

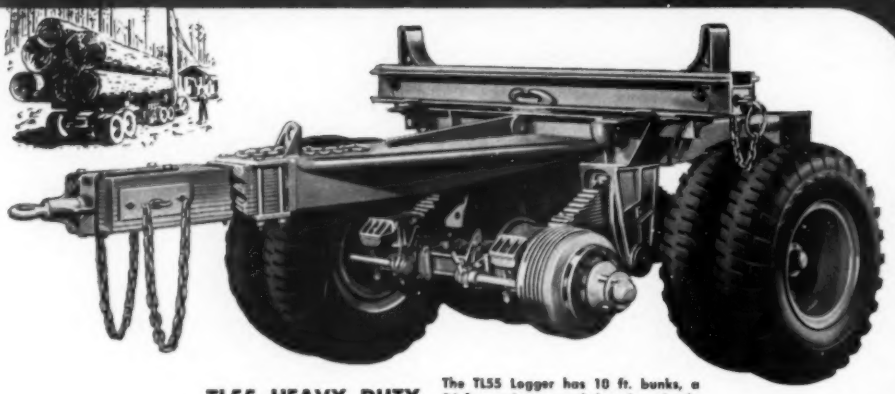
EATON MANUFACTURING COMPANY

CLEVELAND, OHIO

PRODUCTS: SODIUM COOLED, POPPET, AND FREE VALVES • TAPPETS • HYDRAULIC VALVE LIFTERS • VALVE SEAT INSERTS • JET ENGINE PARTS • ROTOR PUMPS • MOTOR TRUCK AXLES • PERMANENT MOLD GRAY IRON CASTINGS • HEATER-DEFROSTER UNITS • SNAP RINGS SPRINGTITES • SPRING WASHERS • COLD DRAWN STEEL • STAMPINGS • LEAF AND COIL SPRINGS • DYNAMATIC DRIVES, BRAKES, DYNAMOMETERS

Cut Your Maintenance and Down Time with

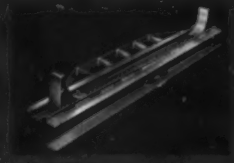
FRUEHAUF "Woods-Engineered" LOGGERS



TL55 HEAVY DUTY The TL55 Logger has 10 ft. bunks, a 24 ft. maximum reach length and rubber bushed trunnion and spring ends.

TAILORED-TO-THE-JOB FEATURES FIT THIS LOGGING TRAILER TO YOUR NEEDS!

Live rubber encloses spring ends and trunnions — cushions against sudden impacts; enables axles to adjust themselves on uneven ground without passing destructive thrusts to frame.



Bunks are of 6 inch ship channel. Box construction and angle reinforcement provide exceptional strength. Bunk locks anchor bunks during loading.

Sturdy brakes provide positive braking action. Pressed steel shoes save 40 lbs. per axle. Drums have tensile strength of 50,000 lbs. per sq. in.

Straddle-mounted springs (14 leaves of ½" x 4" steel) offer unusual stability — add strength to Trailer Underconstruction.

BRUTE strength has been built into every part of this "Super Logger". It's a Trailer that carries the heaviest loads, month after month with little attention and less trouble. As a result, *maintenance bills are lower, down time is practically nil!*

That's because, among other things, it has logger-engineered king-size brakes. They operate against hi-tensile drums — the toughest in the industry.

Massive steel bunks, a hi-tensile main frame and an exclusive I-Beam Axle of chrome-molybdenum steel provide maximum strength per pound of weight.

All these are potent reasons why logging men everywhere have made Fruehauf "Woods-Engineered" Loggers the synonym for "tops" in on and off-the-road logging equipment. Ask your local branch man about a Fruehauf Logger to fit your needs.

FRUEHAUF TRAILER COMPANY

Logging Manufacturing Plant, Seattle, Wash.

Sales and Service: Portland • Seattle • Spokane • Sacramento San Francisco • Billings • Fresno • Salt Lake City • Phoenix Los Angeles • Albuquerque

FRUEHAUF Trailers
"ENGINEERED TRANSPORTATION"

***FIRST* IN TRUCK-TRAILER TRANSPORT!**

Clean Engines Last Longer

TYDOL HD

KEEPS ENGINES CLEANER!

Why TYDOL HD Keeps Engines Cleaner

1. Rich in potent detergent additives, Tydol HD quickly loosens sludge (gum, varnish, carbon) from vital parts . . . actively disperses these foreign deposits.

2. Tydol HD holds sludge particles harmlessly in suspension where they cannot cause wear. With ordinary oils, sludge settles onto valve stems and pistons; soon hardens.

3. When Tydol HD is drained, out goes sludge, too . . . because it's suspended in the oil. Valve stems, pistons and rings stay free and clean because Tydol HD gets rid of sludge that other oils can't budge.

No doubt about it. An engine that's kept clean . . . free of power-robbing sludge, carbon and varnish . . . gives you more trouble-free miles of top performance. And Heavy Duty Tydols are winning wide acclaim as the oils that drive out sludge and carbon. In fact, they *keep engines cleaner* than any other oil . . . protect far better against wear. Try them! See what you save when you switch to the heavy duty oils that *clean* as they *protect* as they *lubricate*. Get *three* jobs done; *not* just one!

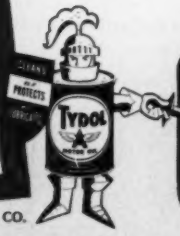
3 GREAT TYDOLS TO CHOOSE FROM

TYDOL HD—Heavy Duty oil for high-speed gasoline, butane, diesel-fueled engines in automobiles, busses, trucks, tractors and stationary units under normal conditions. SAE grades 10, 20, 30, 40, 50. Sold in cans and drums.

TYDOL HD S-1—Higher detergency level than Tydol HD. For every type of engine subjected to frequent and continued over-loading. For engines in delivery service making many stops and starts. SAE grades 10, 20, 30, 40 and 50. In drums.

TYDOL HD S-2—Highest detergency level of the HD series. For high performance super-charged engines using all types of diesel fuels, under the most extreme operating conditions. SAE grade 30. Sold in drums.

Rely on your Associated Representative for expert help on any lubrication problem



TYDOL HD
Compounded Motor Oil

© TWA CO.

• TIDE WATER ASSOCIATED OIL COMPANY •

FIRSTS OF . . . . .

MOLINE MALLEABLE IRON COMPANY PRODUCTS . . . . .

First . . . . . ROLLTOP MALLEABLE CHAIN . . . . .

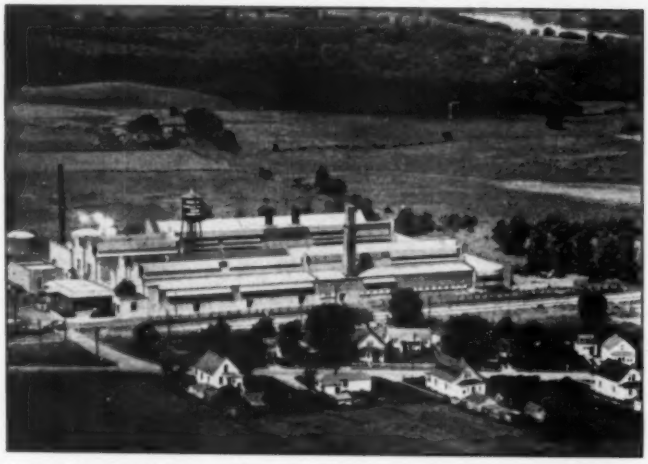
First . . . . . LONG LINK CAST CHAIN . . . . .

First . . . . . PANGBORN CONVEYOR FLIGHTS . . . . .

First . . . . . with PRECISION MECHANIZED MALLEABLE CHAIN MANUFACTURE . . . . .

LET MOLINE PRODUCTS AID YOU . . . . .

WITH LUMBER PRODUCTS' IMPORTANT DEFENSE JOBS . . . . .



New modern expanded home of Moline Malleable Iron Company's precision malleable chain manufacturing plant . . . St. Charles, Illinois . . .

We Manufacture a Complete Line of Detachable Transfer Chains, Riveted Transfer Chains, Riveted Refuse Chains, (Malley) Long Link Conveyor Chains, Conveyor Flights, Roller Top Transfer Chains. We Are Licensed Manufacturers of Promal Chain.

CONTACT MOLINE DISTRIBUTORS FOR SERVICE

J. W. MINDER CHAIN & GEAR CO.

Portland, Ore.
307 S. E. Hawthorne
EMpire 1131

Los Angeles, California
923 Santa Fe Ave.
TRinity 9181

Hudson Machinery Co. Tacoma, Wash. 668 East 11th Street MAin 2617

Western Equipment Ltd. 965 Yates Street Victoria, B. C. 102 Main Street, Vancouver, B. C.

Chain Gear, Inc. Seattle, Wash. 822 First Avenue South MAin 7000

MAKING MALLEABLE IRON CHAINS FOR 50 YEARS

MOLINE MALLEABLE IRON CO. ST. CHARLES, ILL.

To Save Money on Speed Reducers

BUY PACIFIC-WESTERN *STOCK DESIGNS*

You can lower your plant-equipment costs by selecting a stock-design speed reducer for new or replacement purposes. You also save delivery time. A wide variety of types of Pacific-Western speed reducers—covering most industrial applications—is available either from stock or with minimum manufacturing lead time. Ask your nearest Pacific-Western sales engineer to show you how you can avoid the cost and delay of special tooling or engineering *where it is not necessary.*

This single-reduction, parallel-shaft herringbone reducer, shown with cover off, is one of the Pacific-Western stock designs available in many standard stock ratios and in a wide range of horsepower capacities.

STOCK-DESIGN REDUCERS

- ★ Single, Double, and Triple Reductions
- ★ Parallel-Shaft Reducers
- ★ Right-Angle Reducers
- ★ Vertical Reducers
- ★ Motorized Reducers
- ★ Cone-Drive Reducers
- ★ Speed Increasers (High-Speed Units)

NON-STOCK DESIGNS

- ★ Pacific-Western special geared transmissions include types and sizes for every application.

The mechanical features of this reducer represent the experience of fifty years of gear-making design and production. You will find tested and proved quality in every speed reducer in the Pacific-Western line. Complete mechanical details and specifications are given in Bulletin 4802, "Herringbone Speed Reducers." Use the convenient coupon to obtain your complimentary copy of this 48-page book.

Use Handy Coupon for Quick Information

Plants • 417 Ninth Ave. S., Seattle 4, Wash.
2600 E. Imperial Highway, Lynwood, Los Angeles County, California
1035 Folsom St., San Francisco 3, Calif.
117 N. Palmer St., Houston, Texas
Representatives • 930 S.E. Oak St., Portland 14, Oregon
Room 211, Chamber of Commerce Bldg., Denver, Colorado
Engineering & Machinery Ltd., 1366 W. Broadway, Vancouver, B.C.

5131

WESTERN GEAR WORKS
Manufacturers of **PACIFIC-WESTERN** Gear Products
Pacific Gear & Tool Works

Plants: Seattle, San Francisco, Lynwood (Los Angeles County), Houston
Representatives: Portland, Denver, Vancouver, B.C.

Attach this coupon to your letterhead and mail to your nearest Pacific-Western plant or office.

WESTERN GEAR WORKS

Gentlemen: Please send me the information requested by return mail.

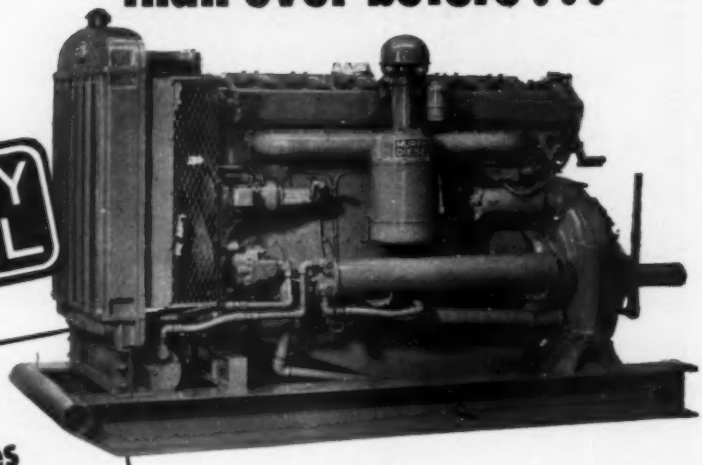
☐ Send copy of Herringbone Speed Reducer catalog.

☐ Send complete information on type of speed reducer listed below:

NAME _____

TITLE _____

NOW MURPHY DIESEL offers you a broader range of sizes than ever before . . .



MURPHY DIESEL

✓ 21 Models
✓ Diesel Engines or Power Units
✓ 1200 or 1400 RPM
✓ Generator Sets
✓ Mech-Elec Units

And only MURPHY offers all these design features:

- TRUE DIESEL OPERATION gets more work out of your fuel . . . minimizes wear and tear on the engine.
- UNIT FUEL INJECTION eliminates the troubles of ordinary diesel fuel injection systems.
- FOUR VALVES PER CYLINDER increase efficiency and put an end to valve troubles.
- HYDRAULIC SERVO-TYPE GOVERNOR protects the engine and assures immediate response to power demands.
- HEAVY DUTY CONSTRUCTION assures thousands of hours of dependable service.

WITH its broad new line, Murphy Diesel makes its advantages of economy and dependability available to more power users than ever before. Now you can have 1200 or 1400 continuous rpm operation in engines or power units capable of delivering 90 to 220 H.P.; altitude engines, which maintain sea level ratings at altitudes up to 9000 ft., are also available. Murphy Diesel Generator Sets offer continuous ratings from 60 to 133 K.W. Mech-elec units deliver both electric power and mechanical power, simultaneously or separately.

Whatever your power requirements, it will pay you to get the facts on Murphy Diesel. Write for a copy of the booklet "*10 Questions to Ask a Diesel Engine Salesman*" or see your Murphy Diesel Dealer.

MURPHY DIESEL COMPANY
5351 W. Burnham St.
Milwaukee 14, Wisconsin

SALES PARTS AND SERVICE
Strategically located throughout the United States

Why it will Pay To Go LORAIN ALL-THE-WAY...

To give you the best in performance and results, we need know only 2 things about your operations — (1) What do you need to do and (2) how big is your operation? . . . Knowing these, there's bound to be a machine in the Lorain line of products that will come up with the right answers for you . . . That's because Thew-Lorain builds the *World's Greatest Selection* of power shovels and cranes . . . You can get a machine of the proper capacity (1/2 to 2 cu. yd. class; up to 45 tons lifting capacity); you can choose the correct boom from shovel, crane, clamshell, dragline, pile driver to do your construction, maintenance or loading jobs; and you can get a suitable mounting of crawler for semi-stationary work, or a high-speed rubber-tire mounting that will eat up the miles between landings . . . and you can get all this data from your nearest Thew-Lorain distributor. Call him today!

THE THEW SHOVEL CO., LORAIN, OHIO

SEND FOR NEW LOGGING BOOK!

Write for free copy of new 12 page catalog, illustrating modern methods on "shows" in all parts of the country. Packed with pictures, names and data.

Headquarters for Thew-Lorain

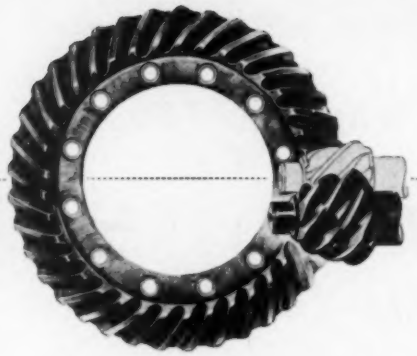
Let us give you the facts today!

Your Local Thew-Lorain Distributor is Listed Here

ANDREWS EQUIPMENT SERVICE OF WASHINGTON, INC., Spokane, Wash.
CENTRAL MACHINERY CO., Great Falls, Havre and Lewistown, Mont.
COAST EQUIPMENT CO., San Francisco, Calif.
A. H. COX & CO., Seattle, Tacoma and Wenatchee, Wash.
P. L. CROOKS & CO., Portland, Ore.
THE MOUNTAIN TRACTOR CO., Missoula and Kalispell, Mont.
SOUTHERN IDAHO EQUIPMENT CO., Idaho Falls, Boise and Twin Falls, Idaho.
TRACTOR & EQUIPMENT CO., Sidney, Miles City and Glasgow, Mont.
VANCOUVER MACHINERY DEPOT, Ltd., Vancouver, B. C., Canada
WORTHAM MACHINERY CO., Cheyenne, Wyo., and Billings, Mont.
Branches: Sheridan, Greybull, Casper and Rock Springs, Wyo.

THEW LORAIN® LOG LOADERS

WHO makes HYPOID GEARING makes a difference!



TIMKEN-DETROIT

Is The One Truck Axle Manufacturer With Years of Hypoid Experience and Know-How!

The Timken-Detroit Axle Company was the first manufacturer of heavy-duty truck axles to realize that the inherent greater torque capacity of hypoid gears is advantageous in heavy-duty rear axles. In 1944, after several years of development work, the first rear axle for heavy-duty motor trucks equipped with hypoid gears was placed in production. Since that time, millions of ton miles of testing under all conditions in actual service, plus exhaustive laboratory testing, has *proved* the cost-saving ruggedness and durability of Hypoid Gearing.

Early in 1947, The Timken-Detroit Axle Company placed in regular production a complete series of Hypoid-equipped "3 for 1" rear axles for trucks of 15,000 to 28,000 G. V. W., with engines developing from 100 to 300 horsepower. In this series of "3 for 1" axles, hypoid gears are used for single-reduction final drives, and for the first gear reduction in single-speed and two-speed double-reduction final drives.

Today, Timken-Detroit offers a complete range of capacities—a hypoid rear axle for each size of pneumatic tires—with the correct type of final drive and gear ratio for the job to be done.

WRITE FOR FREE ILLUSTRATED BOOKLET!

TIMKEN Detroit AXLES

A PRODUCT OF THE TIMKEN-DETROIT AXLE COMPANY
DETROIT 32, MICHIGAN

Accepted SAE Standard

TRADE MARK REGISTERED

PLANTS AT: DETROIT AND JACKSON, MICH. • OSHKOSH, WIS. • UTICA, N. Y. • ASHTABULA AND KENTON, OHIO • NEW CASTLE, PA.

NO SHUTDOWN

. . . Because of Log Loader Control Failure

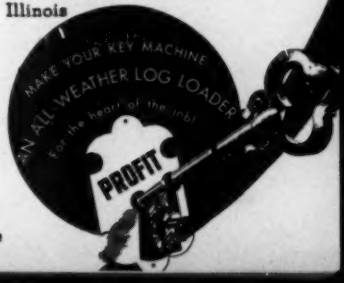
Your Log Loaders are in *Key Spots*—the heart of the job that starts the logs for the landing. Check into the subject of operation before you buy your next Log Loading equipment.

The "Feather-Touch" Clutch Control, the simple little device that makes Northwest operation easy, is practically fool-proof. It is a simple band device, free from high-pressure pumps and lines, nothing to refill, nothing affected by weather and temperature—and it is proved in years of service.

Release is positive and the *feel of the load* is always in direct ratio to the movement of the control lever. This makes spotting easy, assures greater output and greater safety in the woods with the certainty that there will be no shutdown on your show because of control failure.

You can't afford to have anything but the best for your *Key Spots*. Add to these advantages the other Northwest features that make the Northwest an *all-weather* Log Loader. Plan ahead to have a Northwest in the heart of your job.

NORTHWEST ENGINEERING CO.
1510 Field Bldg., 135 South LaSalle Street
Chicago 3, Illinois



NORTHWEST

NORTHWEST SALES OFFICES:

SEATTLE, WASH. 1234 Sixth Ave. South
SAN FRANCISCO, CALIF. 255 Tenth Street
LOS ANGELES, CALIF. 3707 Santa Fe Avenue

A Complete Line of Transmission Belts

U. S. ROYAL TRANSMISSION BELT

Square-cut edge construction, no folds. Made with specially woven hard duck giving unusual strength with low stretch. Friction between plies is the highest quality obtainable, scientifically compounded for long life, extra flexibility. U. S. Royal friction surface provides superior traction on pulleys. Roll and cut lengths or made endless by patented U. S. Royal-Splice or by 'round and 'round method.

U. S. RAINBOW TRANSMISSION BELT

Folded edge construction. A general purpose belt known for outstanding operational economy and for maximum dependability in severe service. Duck is woven to give strength and flexibility lengthwise and body stiffness crosswise. Special friction between plies assures remarkably long flexing and aging life.

U. S. ROYAL CORD ENDLESS BELTS

Royal Cord Endless Belts are designed for use on general purpose flat drives, ranging from light to heavy duty, where the use of low stretch, high tensile strength, extra flexible, premium construction, endless belting is mandatory. Furnished in seven weights; special constructions available for use under conditions of excessive oil, heat, abrasion and corrosive chemical fumes.

U. S. ROYAL JUNIOR TRANSMISSION BELT

Designed for small machine drives. Constructed of plies of tough cotton duck, thoroughly impregnated with specially compounded rubber. A light, flexible true-running, elastic belt that performs extremely well at high speeds and withstands frequent shifting. Royal Junior has a wide range of application and requires minimum care.

U. S. SPEEDAGE CORD ENDLESS BELTS

For use where long wear, smooth-running, high speed, small pulleys, shock absorption, infrequent take-up and oil resistance are encountered. Light enough to operate at speeds in excess of 10,000 F.P.M., and thin enough to operate over pulleys as small as ½" in diameter.

Whatever your power transmission problem may be get in touch with "U. S." for the latest in technical advice and help. Write to address below.

PRODUCTS OF

U.S.RUBBER

SERVING THROUGH SCIENCE

UNITED STATES RUBBER COMPANY

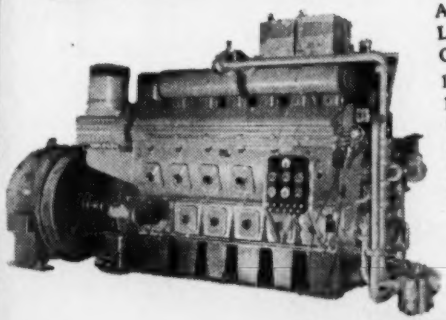
Look for the "U. S." name when buying Transmission Belts.

UNITED STATES RUBBER COMPANY

MECHANICAL GOODS DIVISION • ROCKEFELLER CENTER, NEW YORK 20, N. Y.

ZIDELL LICKED OUR TOUGHEST PROBLEM...POWER!

HERE'S YOUR ANSWER TO BIGGER MILL CUTS AND PROFITS! A Dependable Low Cost Juice Plant!



Linn Plywood and Door, Albany, Oregon, and Big 4 Lumber Co., Monument, Oregon, solved their power problems with the efficient plant illustrated here. It's a 500 kw Fairbanks-Morse generator, AC, 440 volts, 3 phase, 60 cycle. Direct connected to model 12567, 900 h.p., 740 rpm diesel engine. Only 2 left. Ready for installation at your mill now.

ZIDELL
Oregon Distributors for:
CUNNINGHAM SAWMILLS
CROCKER-WHEELER ELECTRIC MOTORS
REED-PRENTICE CHAIN SAWS

ZIDELL
Manufactures:
ZIDELL Variable Speed Feedworks

Diesel Electric
Plants in Stock
125 KVA, 3 ph., 440V-AC
75 KVA, 3 ph., 440V-AC
100 KW, 230V-DC
50 KW, 120V-DC
40 KW, 120V-DC
10 KW, 120V-DC
5 KW, 120V-DC, gasoline driven
Plus many other Generator and Electric Plants not listed here.

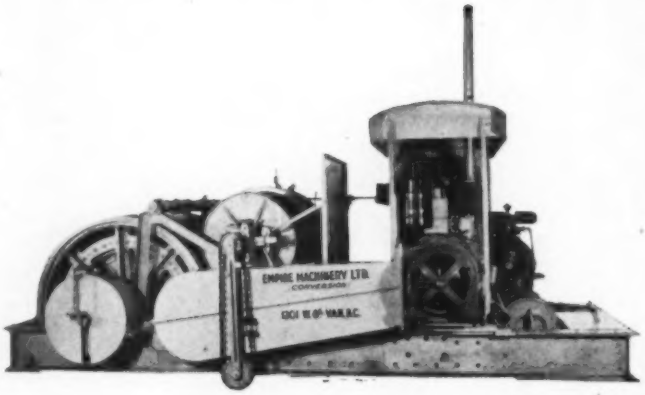
PHONE, WRITE, WIRE DEPT. LM

ZIDELL MACHINERY & SUPPLY CO.

3121 S.W. MOODY STREET
ATwater 8691 PORTLAND 1, OREGON

ANOTHER STEAM TO DIESEL CONVERSION WITH

GEARMATIC



Conversion of this Washington 12 x 14 to Diesel was handled by Empire Machinery Ltd. for the Sunrise Logging Co. at Minstrel Island, B. C.

Now powered by a 220 H. P. Buda Diesel, it is equipped with a Model 20 FS Gearmatic Transmission.

GEARMATIC AIR ACTUATED QUICKCHANGE TRANSMISSION

Industrial Models of 2, 3, 5, and 7 speeds
Capacity—from 60 to 1200 Horsepower

- Gearmatic gives you combined mechanical efficiency with the ability to select and apply the different speeds INSTANTLY under full load and engine speed.
- Gearmatic gets maximum available H. P. to the logs.
- Gearmatic holds the load in neutral.

GEARMATIC CO., LTD.

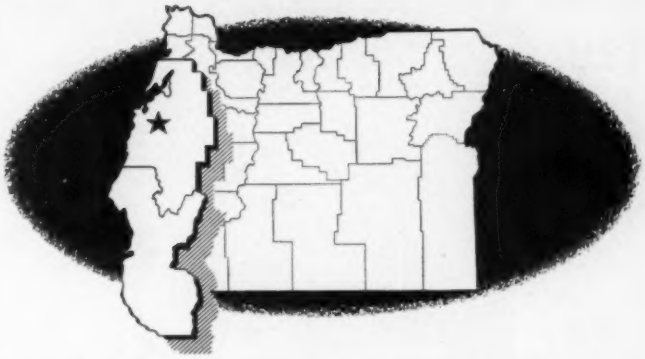
636 West 6th Avenue — Vancouver, B. C.

Representatives in the United States

WASHINGTON
Northwest Motor Parts and Mfg. Company
Seattle, Washington

OREGON
Western Equipment Co.
Portland - Eugene
Roseburg, Oregon

CALIFORNIA
Riley and Williams, Inc.
Eureka, California



Serving Coos and Curry Counties

NEW *Howard-Cooper* COQUILLE BRANCH

(One mile north of Coquille, Highway 101)

D. C. WILSON, *Manager*

DON GOSNELL, *Sales Engineer*

A new link in the Howard-Cooper chain of service has now been added at Coquille, Oregon. This new branch provides complete sales and service on over fifty lines of construction and logging equipment.

Make it your headquarters in Coos and Curry Counties.

Howard-Cooper Corporation

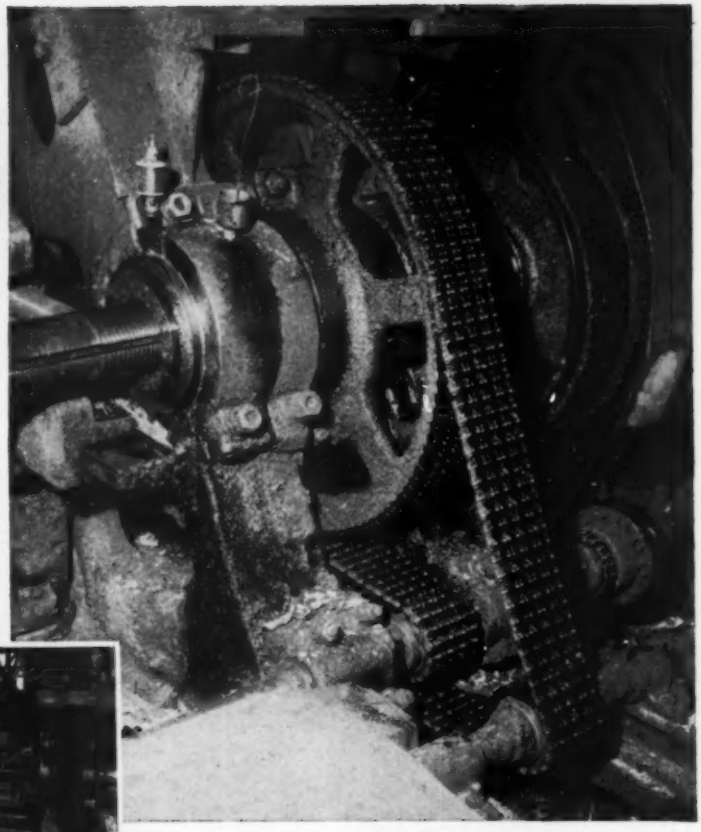
PORTLAND OREGON

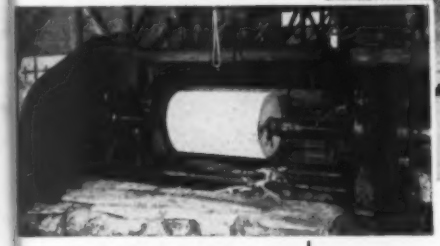
Branch Offices: **Albany • Central Point • Coquille • Eugene • Roseburg • Seattle**

Whitney Chain Drives

"Pay Off where the Chips Fly"

with Uninterrupted Service





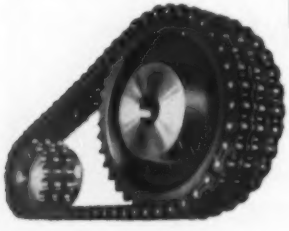
For over eighteen months, Whitney Chain Drives have been transmitting uninterrupted power on a 66-inch lathe in the Perry County Plywood Corporation at Beaumont, Mississippi. As the illustrations show, operating conditions are severe, and the chain has to operate constantly in wood chips and dust.

That Whitney Chain Drives stand up under the toughest of service is evidenced by the following quote from that company — *"We are extremely happy to report that from the moment the operation started, it has given us not a moment's trouble, nor have we as yet had to make any adjustments. Besides, the quietness of the machine with the chain drive would in itself have been well worth the change."*

Regardless of the type of equipment, whether it be for original installation or a replacement of the existing drive, Whitney Chain Drives . . . the all steel drives . . . meet the requirements for positive power transmission. Their versatility and adaptability enables them to meet standard or special requirements . . . permits operation on long or short centers . . . drive shafts clockwise or counter-clockwise from one power source simultaneously, while the hardened alloy steel construction throughout guarantees long life with minimum maintenance.

Whitney Service

And remember, Whitney Chain Drives . . . roller, silent, conveying chains, and cut-tooth sprockets . . . are carried in stock by more than 130 Whitney Distributors. This fast local service saves you time, assures prompt delivery. In addition 15 Whitney Field Offices, strategically located throughout the country, are at your service to help solve your power transmission problems. Consult your nearest Whitney Field Office or write for catalog.



Whitney Chain Company

215 Hamilton St., Hartford 2, Connecticut

IMPORTANT ANNOUNCEMENT

THE NEW KLAMATH IRON WORKS 5′ BAND MILL

Hand or power operated top guide and top wheel mechanism.

Pressure top guide. Weighted knife edge strain.

No sliver bottom guide. Anti-friction bearings.

Steel fabricated base and cast iron column.

Steel top wheel. Cast iron solid bottom wheel.

**Illustrating 5-foot band mill with 9" raising lock resulting in 45" opening under SAW guide.*

Original Designers and Builders

Sawmill and Box Factory Machinery

Remanufacturing and Lumber Handling Systems

Complete Portable and Semi-Portable Band Sawmills

Write for details

P. O. Box 129 KLAMATH FALLS, OREGON Phone 7721

KLAMATH IRON WORKS

Representatives: Washington Machinery & Supply Co., Spokane, Wash.
Star Machinery Co., Seattle, Wash.
United States Machinery Co., New York

Tomorrow's pulp and paper depend on TODAY'S trees

WHEN A WORM LIKE THIS

CAN TURN

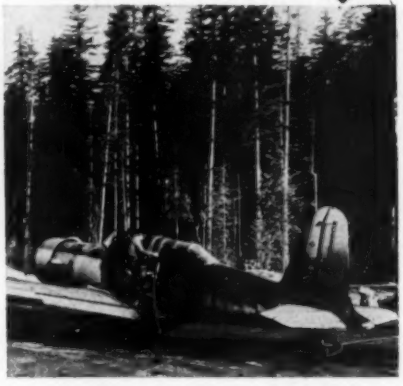
TIMBERLANDS

LIKE THIS

INTO

DESOLATE FIRE HAZARDS LIKE THIS

CONTROL LIKE THIS IS NEEDED



Let's save our priceless timber stands

Latest available figures tell us that there are over 2,267,000 acres of budworm-infested timberland in Washington and Oregon alone. A 267,000-acre spraying operation in 1949 with Penco forest spray showed a 97% budworm mortality. We are glad to join with other interests, as well as state and federal authorities, in this fight to conserve our natural resources. Support from every quarter will be helpful, for the battle may be a long one.

In the West: Pennsylvania Salt Manufacturing Company of Washington . . . Tacoma, Washington; Portland, Oregon; Berkeley and Los Angeles, California. In the East: Pennsylvania Salt Manufacturing Company, Philadelphia 7, Pa.

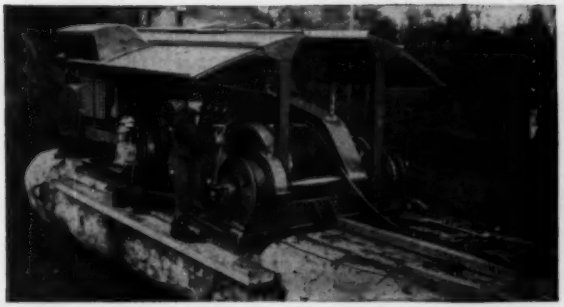
Liquid Chlorine • Caustic Soda • Bleaching Powder • Potassium Chlorate • Sodium Chlorate • Anhydrous Ammonia • Perchloron® • Sodium Arsenite • Sodium Hypochlorite—DDT • Penco forest spray • Weed Killers.

PENN SALT

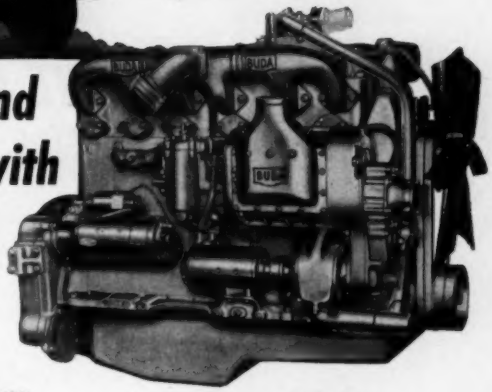
chemicals

Progressive Chemistry for over a Century

For Yarders or Trucks...



Get More Acceleration and Sustained Lugging Power with BUDA Dyna-Swirl DIESELS



In or out of the woods, on trucks, yarders, or saw mills, the new Buda Dyna-Swirl Diesels give you more of everything you want in an engine—power, smooth operation, acceleration, sustained lugging power and dependability.

Buda Dyna-Swirl Diesels offer:

15% more horsepower for extra capacity loads

14% more useable torque or lugging ability

Less "down-time" due to improved cooling, improved combustion and power adjustments.

Your nearby Buda Distributor will give you complete imformation on these new engines at no obligation to you. Write today for Bulletins. The Buda Company, Harvey, Illinois.

NEW BUDA DYNA-SWIRL DIESELS

- **More Horsepower**
- **Lower Fuel Consumption**
- **Greater Lugging Ability**
- **Less Maintenance**
- **Absolute Reliability**

BUDA

Buda Engine & Equipment Co., Inc.
3407 Airport Way
Seattle, Washington

Buda Engine & Equipment Co., Inc.
2380 N. W. Upshur Street
Portland 10, Oregon

King-Knight Co.
360 Jefferson Street
San Francisco 11, California

Simson-Maxwell, Ltd.
1931 W. Georgia Street
Vancouver, British Columbia

because its controlled quality remains uniform from shipment to shipment
because it is manufactured from washed, carefully prepared, consistently uniform coal
because the same skill and experience utilized in the custom-production of steel is applied to creosote oil

ORDER CREOSOTE OIL DIRECT FROM INLAND

This is a picture of the coal storage yard at our Indiana Harbor Works. Here is the raw material for your creosote oil. This coal has been carefully selected as a fuel for the steelmaking process. It has been thoroughly washed in a modern preparation plant at the Inland-developed source of high grade coking coal in Kentucky. This single source eliminates the possibility of your getting creosote oil made from mixtures of different coal tars, or cokes of varying properties.

That's why Inland, with its skilled men and modern processing equipment, can produce creosote oil of the highest uniformity and quality. Toxicity and permeability invariably meet AREA and AWPA specifications.

• • •

Tank car quantities handled promptly

Contact the Railroad, Pig Iron and Chemical Division in Chicago or any of Inland's district sales offices.

INLAND STEEL COMPANY

38 South Dearborn Street, Chicago 3, Illinois

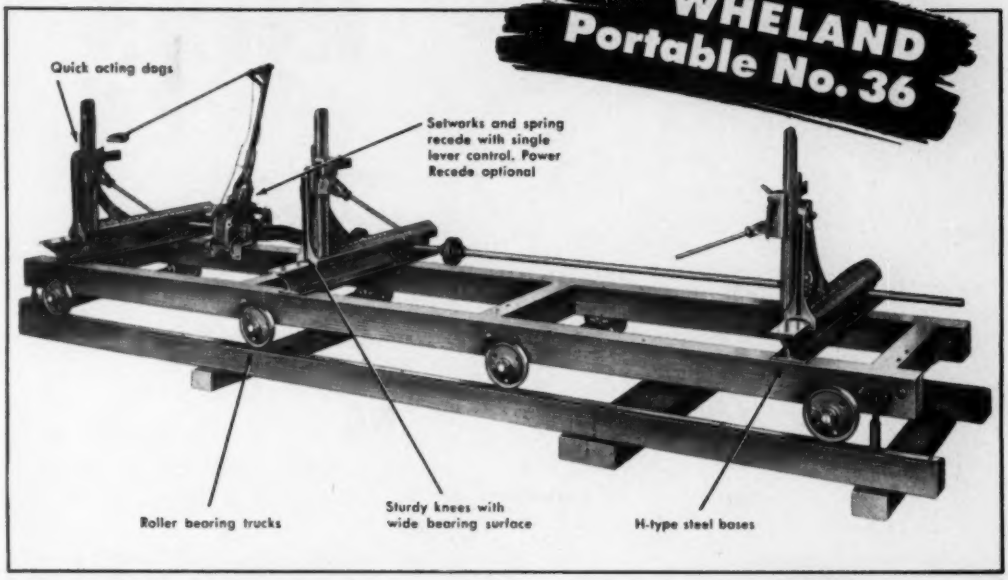
Sales Offices: Chicago • Davenport • Detroit • Indianapolis • Kansas City • Milwaukee • New York • St. Louis • St. Paul.

Principal Products: Sheets, Strip, Tin Mill Products, Bar Mill Products, Plates, Structural Shapes, Floor Plate, Piling, Reinforcing Bars, Rails and Track Accessories, Pig Iron, Coal Chemicals.

INLAND

A PORTABLE MILL
with BIG MILL FEATURES

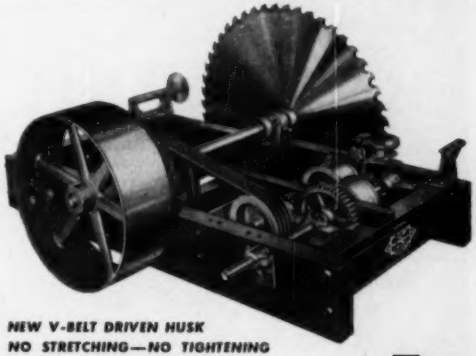
WHELAND Portable No. 36


Quick acting dogs
Setworks and spring recede with single lever control. Power Recede optional
Roller bearing trucks
Sturdy knees with wide bearing surface
H-type steel bases

WHELAND No. 36 IS FAST . . . DEPENDABLE . . . ACCURATE

The portable mill that makes the most profit is the one that can cut the most lumber—with fewer men to run it. The Wheland Portable No. 36 is built to do just that. It has one of the fastest small mill feeds ever built—sure and constant power with "V" belt drive. Finest quality construction throughout—strength where strength is needed, yet light enough for ease of portability.

New husk with "V" belt drive gives constant power with no slipping. Short, vertical feed belts insure instant and better control. One piece iron feed frame, simplest design, can't get out of line. Large arbor with heavy duty roller bearings. The best husk for your money.



NEW V-BELT DRIVEN HUSK
NO STRETCHING—NO TIGHTENING

Adaptable to diesel, gasoline or electric drive

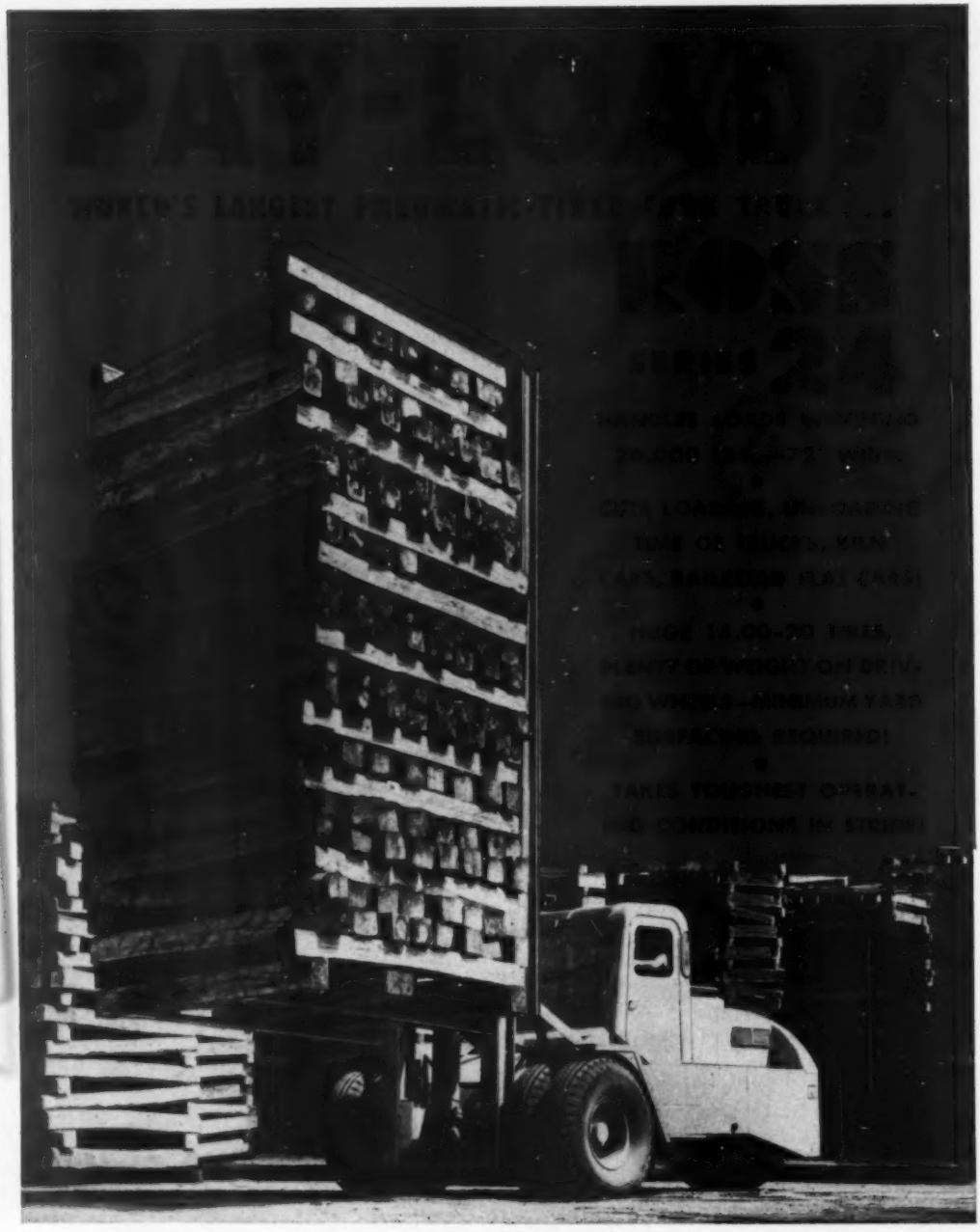
Write today for full information on the Wheland Portable No. 36. It saves your lumber and saves your money. Bulletins free on request.

The WHELAND Company

MANUFACTURERS OF COMPLETE SAWMILLS AND AUXILIARY MACHINERY
CIRCULAR SAWMILLS—HEAVY, PORTABLE • BAND SAWMILLS • EDGERS AND TRIMMERS • TRANSMISSION AND CONVEYOR MACHINERY

CHATTANOOGA, TENNESSEE

FOR OVER 80 YEARS—THE FOREMOST NAME IN SAWMILL EQUIPMENT



It will pay you to get all the details about this giant Ross fork truck—designed expressly to bring you new low lumber handling costs. Write today.

Rely On ROSS

THE ROSS CARRIER COMPANY

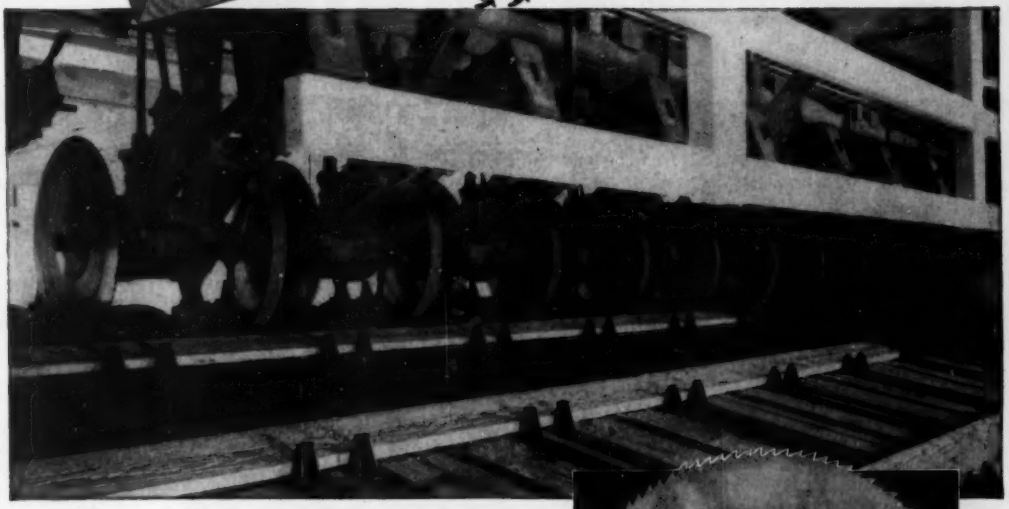
Direct Factory Branches and Distributors throughout the world.

240 MILLER ST., BENTON HARBOR, MICHIGAN, USA

For the Smooth-Trimmer Saw

that gives

Satin-Smooth ENDS...



...*Specify* SIMONDS

RED CENTER

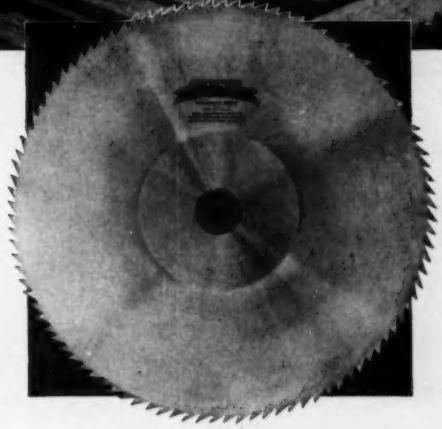
With many trimmer saws in one installation, those saws must cut... and keep on cutting... with exactly *uniform* smoothness. And there's never a rough cut in a Simonds Saw, because they're *uniformly* made like this:

1: **Simonds special nickel alloy steel** takes all cutting strains... and all thicknesses of lumber... right in stride.

2: **Simonds saw-teeth,** with 45° face-bevel, actually plane the ends of lumber as they cut it off... so that ends can be clearly trade-marked and grade-marked without further finishing.

3: **Simonds special hollow-grinding process** assures perfect balance...and ample clearance back from points of teeth... for fast trimming of any size lumber. No vibration. No gumming or burning. No splinters on bottom of cut.

Remember, too, that Simonds also makes *flat* saws for regular trimming. And no matter which type of saw you use, remember that Simonds "Red Centers" are the trimmer saws that cut longest between sharpenings ... *give you the most for your saw-dollar.* Order from your dealer.



SIMONDS
SAW AND STEEL CO.

Branch Offices in Boston, Chicago, San Francisco and Portland, Ore.
Canadian Factory in Montreal, Que.

ALLIS-CHALMERS
Sets New Standards

. . . THE NEWEST, FINEST

model **HD-20**
Hydraulic Torque Converter Drive
175 net engine hp.
41,800 lb.

model **HD-15**
102 drawbar hp.
27,500 lb.

Get the full story from your Allis-Chalmers dealer.
See these tractors perform. They're built for YOUR job!

for Tractor Performance
for Lasting Durability
for Simplified Servicing
for Ease of Operation

TRACTOR LINE ON EARTH

model **HD-9**
70 drawbar hp.
18,500 lb.

model **HD-5**
40.26 drawbar hp.
11,250 lb.

Originator of the Torque Converter Tractor

ALLIS-CHALMERS

TRACTOR DIVISION • MILWAUKEE 1, U. S. A.

ALL ROPES *look* ALIKE... but THERE'S MORE THAN MEETS THE EYE...

Rope wire viewed under a microscope with 100 magnification and the correct McQuaid-Ehn grid superimposed and matched to the sample for classification.

Yes, all wire ropes *do* look alike...on the outside. But not when you go 100 times beyond the range of normal vision. That's where you find the big difference... because that's where the grain size of the steel shows up.

Steel used for Wickwire Rope is measured for proper grain size by the exacting McQuaid-Ehn test. Typical samples are carburized to 1750° F., cooled slowly, polished and etched; then examined under a high-powered microscope for the proper matching of a McQuaid-Ehn grid to the size of the crystals. Thus, we make sure that steel going into Wickwire Rope conforms to the definite grain size that will give longest, most satisfactory service.

Such quality control of basic properties is possible only with a company like Wickwire...where manufacture is integrated from molten metal to finished rope...where the know-how of 52 years experience goes into the making of every wire rope.

It explains, too, why Wickwire Rope always gives you uniform performance, enduring reliability and longer, more economical service on the job. For the *right* rope for your particular requirements, see your local Wickwire distributor. Wickwire Rope is available in all sizes and constructions, both regular lay and WISSCOLAY *Pre*formed. For your free copy of "Know Your Ropes" write to: Wire Rope Sales Office, Wickwire Spencer Steel Division of C.F.&I., Palmer, Mass.

WICKWIRE ROPE

CFI SUBSIDIARIES

A PRODUCT OF THE WICKWIRE SPENCER STEEL DIVISION OF THE COLORADO FUEL AND IRON CORPORATION

WIRE ROPE SALES OFFICE AND PLANT—Palmer, Mass. EXECUTIVE OFFICE—500 Fifth Avenue, New York 18, N. Y.

SALES OFFICES—Abilene (Tex.) • Boston • Buffalo • Casper • Chattanooga • Chicago • Denver • Detroit • Emlenton (Pa.) • Houston • New York Odessa (Tex.) • Philadelphia • Phoenix • Salt Lake City • Tulsa

PACIFIC COAST SUBSIDIARY—The California Wire Cloth Corporation, Oakland 6, California

Macks ARE Masters
OF THE TOUGHEST TERRAIN

No matter how tough the going... under the worst of weather conditions... through slippery mire or shifting sand... or over rutted, uneven ground — big SUPER MACK trucks keep the payloads moving on time... at less cost and with less absenteeism.

One big reason why Mack trucks lick the toughest terrain is the exclusive Mack inter-axle Power Divider*. Where unequal tractive requirements are encountered, the Power Divider, acting as a third differential, distributes torque to favor the axle and wheels having the most traction, thus eliminating power dissipation in useless wheel slippage.

Mack's exclusive Power Divider combines with numerous other outstanding Mack features to give you the power, strength, traction and easy maintenance so necessary for dependable, uninterrupted service on the job. Your nearest Mack branch or distributor will give you complete details. You'll find it's a story worth listening to.

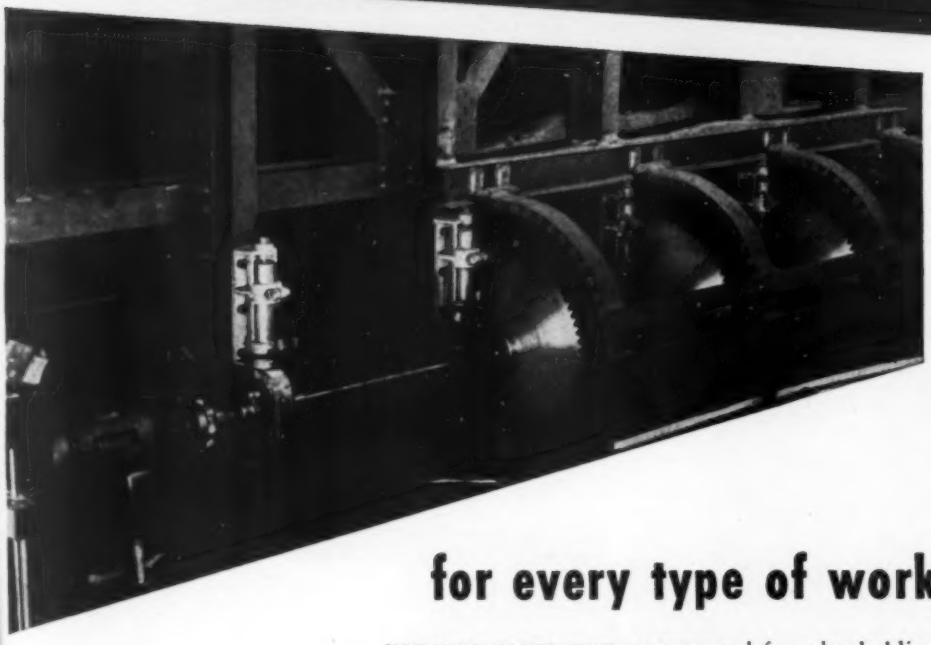
*On Mack six-wheelers

Mack Trucks — Los Angeles — Denver — San Francisco — Seattle — Portland — Salt Lake City. Factory branches and distributors in all principal cities for service and parts.

Mack TRUCKS

... outlast them all

Solid Tooth Saws...



for every type of work

HOE SOLID TOOTH SAWS, unsurpassed for edge-holding and for length of runs between filings, give maximum footage with minimum servicing.

Made of a special alloy steel that takes a high temper without risk of breakage, they are perfectly balanced, accurately ground, and cut true under the fastest feeds.

Hoe's complete line of Solid Tooth Saws includes Head Saws, Rip Saws, Cut-Off Saws, Edgers, Bolters, Trimmers, Slashers, Shingle Saws, Equalizers, Heading Saws, ReSaws, Groovers, Dado Saws, Novelty Saws, Mitre Saws.

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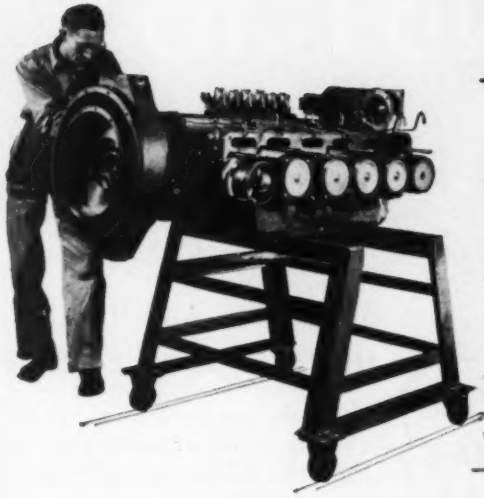
CHISEL-TOOTH SAWS • BITS AND SHANKS • SOLID SAWS • BAND SAWS • KNIVES • FILES

Cummins® Custom-built Diesels



Built not once but Twice

Best buy in power is the engine that's built best

Cummins Diesels have an outstanding record *and* reputation in a wide range of Diesel applications. And here's one reason!

Rugged, lightweight, high-speed Cummins Diesels perform better because they're built better, under strictest quality control methods. Moreover, each engine is actually built twice! After initial assembly, each engine is run in on the test block. Then it is torn down and carefully re-inspected — and after that it is re-assembled and tested *again*.

Such *extra* care in precision building . . . Cummins exclusive fuel system . . . reliable world-wide service and parts organization . . . enable Cummins users to get peak performance . . . less "down-time" and *more* rugged, dependable power.

Better contact your Cummins dealer. He has more facts to show you about making more profits.

Diesel power by CUMMINS

CUMMINS Industrial DIESEL

CUMMINS ENGINE COMPANY, INC. • COLUMBUS, IND.

EXPORT: CUMMINS DIESEL EXPORT CORPORATION
Columbus, Indiana, U. S. A. • Cable: Cumdiex

Lightweight High-speed Diesel Engines (50-550 hp) for: On-highway trucks • off-highway trucks • buses • tractors • earth-movers • shovels • cranes • industrial locomotives • air compressors logging yarders and loaders • drilling rigs • centrifugal pumps generator sets and power units • work boats and pleasure craft.

SUCCESSFUL HAULERS TELL YOU WHY...

THE TREND IS TO TRAILMOBILE

Mr. S. S. Heuer, Owner,
Heuer Truck Lines
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HAUL 5 MILLION LBS. MORE A YEAR...EARN $40,000 EXTRA!

350,000 ROUGH MILES SOLD ME ON TRAILMOBILE!

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SIMPLE ARITHMETIC PROVES IT PAYS TO BUY TRAILMOBILE!

YOU, TOO, CAN BOOST YOUR REVENUE... INCREASE YOUR PAYLOAD

Follow the cost-saving example of hundreds of haulers from coast to coast! Join the big trend to Trailmobile and you, too, will realize boosted revenues through sizeably increased payloads. Rugged, lightweight Trailmobiles on your job will more than offset today's rising operating costs—durable construction will cut your maintenance expense. Get the money-saving facts now!

CHECK and COMPARE!

UP TO 3,200 LBS. BIGGER PAYLOAD REPORTED!

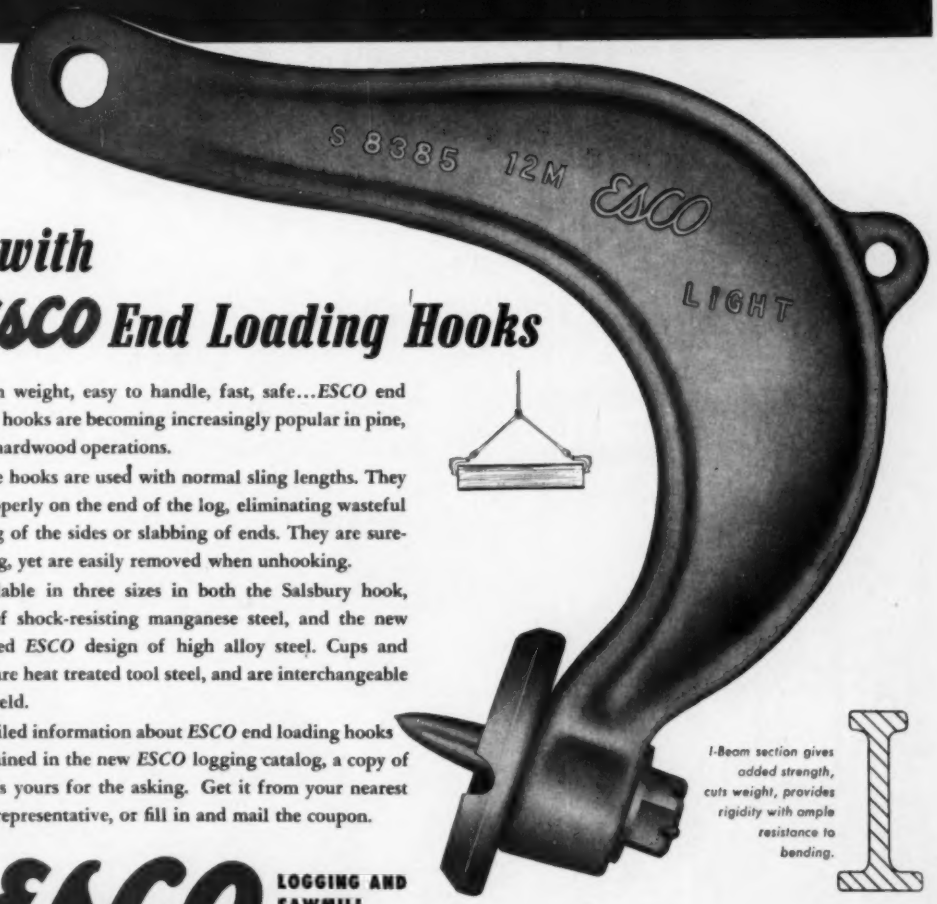
LOAD TESTED IN THE FIELD!

FINE APPEARANCE... EASY TO MAINTAIN!

THE TRAILMOBILE CO.

CINCINNATI 9, OHIO — BERKELEY 2, CALIFORNIA

Lower Loading Costs



...with ESCO End Loading Hooks

Light in weight, easy to handle, fast, safe...*ESCO* end loading hooks are becoming increasingly popular in pine, fir and hardwood operations.

These hooks are used with normal sling lengths. They seat properly on the end of the log, eliminating wasteful gouging of the sides or slabbing of ends. They are sure-gripping, yet are easily removed when unhooking.

Available in three sizes in both the Salsbury hook, made of shock-resisting manganese steel, and the new improved *ESCO* design of high alloy steel. Cups and points are heat treated tool steel, and are interchangeable in the field.

Detailed information about *ESCO* end loading hooks is contained in the new *ESCO* logging catalog, a copy of which is yours for the asking. Get it from your nearest *ESCO* representative, or fill in and mail the coupon.

I-Beam section gives added strength, cuts weight, provides rigidity with ample resistance to bending.

ESCO LOGGING AND SAWMILL EQUIPMENT

ELECTRIC STEEL FOUNDRY

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ELECTRIC STEEL FOUNDRY
2161 N. W. 25th Avenue, Portland 10, Oregon
Please send me a copy of your new Logging Catalog No. 185.

Name_____
Company_____
Address_____
City_____
Zone_____ State_____

TRU-LAY
Preformed
WIRE ROPE

Available through Distributors
All Around America

TRU-LAY *Performs Better—Handles Easier*
Reduces Accidents—Lasts Longer

IT'S MADE
"Intentionally Better"

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AMERICAN CHAIN & CABLE
AMERICAN CABLE DIVISION

In Business for Your Safety

Tru-Lay *Preformed* **Wire Rope**

NOTHING BETTER OR LOWER PRICED in the 5 horse power class

the New REED-PRENTICE Model 50 Portable Chain Saw

In cutting speed, ruggedness and ease of handling, the 5 H.P. one and two-man Model 50 Chain Saws are unsurpassed. Lightweight one-man models with 20", 24", 30" and 36" open-end blades make easy work of felling, bucking and ripping large or small timber of all kinds. Equipped with idler-type tailstock, two-man models in 24" to 60" capacities are especially suited for heavy timbering operations.

All Model 50's feature complete 360° swivel, finger-tip controls, fast-cutting planerchains and automatic clutch. Before buying any chain saw, make sure you see an R-P 50 in action. With Model 50's you produce more and your costs are less.

- LIGHTWEIGHT
- RUGGED
- POWERFUL
- DEPENDABLE

PRICES:

One-Man	Two-Man
20"—$305.00	24"—$331.00
24"—$311.00	30"—$339.00
30"—$319.00	36"—$347.00
36"—$327.00	48"—$367.00

Helper's Handle $5.40

All prices F.O.B. Worcester, Mass.

PORTABLE R·P REED PRENTICE CORPORATION POWER SAWS

REED-PRENTICE CORP.
WORCESTER 4, MASS.

Write today for free descriptive circular and name of nearest dealer or distributor.

The Original Manufacturer of Portable Power Chain Saws

STANDARD ENGINEER'S REPORT

DATA

LUBRICANT RPM Delo Oils

UNIT 50 diesel engines

JOB "Super Inch" gas pipeline

LOCATION From Arizona to California Pacific Coast

FIRM Bechtel Corp, San Francisco

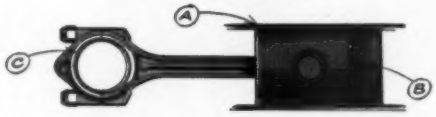
Only 3 ring jobs on 50 engines in 1½ year's operation!

LUBRICATED WITH RPM DELO OILS, only three of the 50 heavy-duty diesel engines, used by Bechtel-Corporation in building the great "Super Inch" pipeline, required ring replacements in 1½ year's work. No bearings were replaced.

WHEN BUILDING "SUPER INCH", biggest and longest gas pipeline in the world, equipment worked under every condition—in knee-deep dust, water, mud, sand and rock; in extreme heat and freezing cold. The trench, 5½ feet deep and 44 inches wide, was dug across deserts, farm areas and mountains from Topock, Ariz., to Oakland, Calif. The 34-inch pipe, welded, asphalt-coated and paper-wrapped on the job, was handled by special off-center tractors at right.

DIESELS OF ALL SIZES up to D-13000 models were on the job. Here four Caterpillar D-8's "walk" a pipe section into place along side the trench. There's an RPM DELO Lubricating Oil for every diesel.

How RPM DELO Oils reduce wear, corrosion, oxidation in Tractor, Truck and other Heavy-Duty Engines



A. Contain special additives that provide metal-adhesion qualities...protect parts whether hot or cold, running or idle.

B. Anti-oxidant resists deterioration of oil and formation of lacquer...prevents ring-sticking. Detergent keeps parts clean...helps prevent piston scuffing.

C. Special compounds stop corrosion of any bearing metal and foaming in crankcase.

FREE BOOKLET on the RPM DELO Oils gives you complete information. Write or ask for it today.

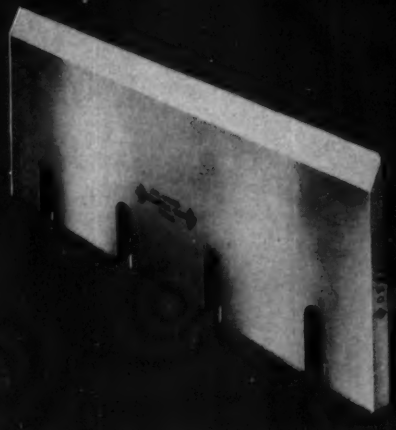
TRADEMARK "RPM DELO" REG. U.S. PAT. OFF.

RPM DELO LUBRICATING OILS

STANDARD TECHNICAL SERVICE checked this product performance. For expert help on lubrication or fuel problems, call your Standard Fuel and Lubricant Engineer or Representative; or write Standard Oil Company of California, 225 Bush St., San Francisco.

STANDARD OIL COMPANY OF CALIFORNIA

First choice for chips



Heppenstall
E.I.S. CHIPPER KNIVES

It's good business to establish chipping facilities to convert waste wood into valuable chips. And successful operators in mills throughout the country know it's good business to standardize on Heppenstall E.I.S. Chipper Knives.

Made from our own electric induction steels, every Heppenstall Knife is heat treated and precision finished to give you maximum service. Installed in your chipper, Heppenstall E.I.S. Knives retain keen edges longer . . . deliver a greater quantity of better quality chips—at a lower unit of cost than any other knife.

FREE: **Handy Wall Card outlining correct knife grinding procedure—just write for it!**

HEPPENSTALL COMPANY
PITTSBURGH 1, PA.

Sales Offices: Birmingham • Boston • Chicago • Detroit • Los Angeles • Milwaukee
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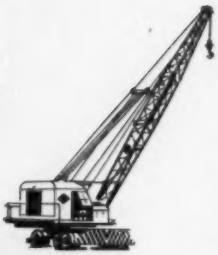
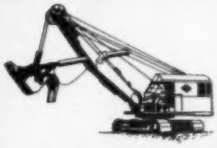
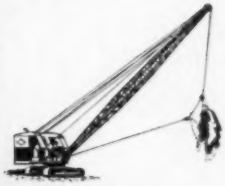


CRANES—Full range of Capacities up to 110 tons, crawler and rubber mounted. Designed for maximum lift and reach.



SHOVELS—Capacities from ¾-yd. to 6-yds.



DRAGLINES—Available in variable capacities.

T2100

LIMA

CRANES
SHOVELS
DRAGLINES

This new trademark is the symbol of a pool of engineering experience that has few rivals in American industry. This important basic resource is reinforced by increased manufacturing facilities, and an expanded organization to serve you.

These things will all contribute to the continuing development that has kept Lima Shovels, Draglines and Cranes always abreast of expanding needs. In the future, as in the past our every effort will be devoted to making our products so good that our customers will continue to be our best salesmen.

BALDWIN-LIMA-HAMILTON CORPORATION
Lima-Hamilton Division, Lima, Ohio, U. S. A.

BALDWIN - LIMA - HAMILTON

FOREST INDUSTRIES NEWS

The Alaska Logging Association has been organized by logging operators in the Northern half of southeastern Alaska. Wallace Westfall of Juneau, Alaska, who operates in Fish Bay, was elected president. L. P. Hiebert, who operates out of Wrangel, was named vice-president; Joseph R. Werner, Juneau, was elected secretary-treasurer. The objectives of the new association are to promote the general welfare and best interests of the Alaska logging industry. It is anticipated that the logging operators of Ketchikan and the southern half of the First Division will also join the Association, and that one of them will be elected to the position of vice president.

Chester R. Matheson has been elected chairman of the Vancouver section of the Canadian Institute of Forestry, formerly known as the Canadian Society of Forest Engineers, with Gerald Burch as vice-president. Members of the council include E. W. Bassett, J. D. Creighton, D. C. Buckland and Lowell Besley.

Ed Stout, who has been in charge of the New Orleans office of American Forest Products Industries, Inc., has transferred to Atlanta, Ga., where he has opened a new office for the southeastern seaboard states.

Charles E. Devlin, Seattle, salesmanager Simpson Industries, Shelton, Wash., and B. V. Hancock, Portland, Ore., salesmanager, Cascades Plywood Corp., Lebanon, Oregon, spent their vacations in Hawaii.

Harold A. Miller, president of the Forest Fiber Products Co., Forest Grove, Oregon, recently announced the appointment of Hugh M. Lineweaver as sales promotion director. He will coordinate sales promotion activities which includes advertising and public relations of the company and Forest Hardboard to lumber dealers, fabricators and industrial manufacturers throughout the United States.

Verne D. Bronson has been appointed acting chief forester of Tree Farm Management Service, Eugene, Ore., to replace Paul Sanders, chief forester, whose resignation became effective Mar. 1.

The fibreboard plant of the Armstrong Cork Co., Jacksonville, Fla., is to be modernized and enlarged. To provide a means for completely processing rough logs and to increase the usage of green wood, the company will purchase a barking drum and a grinder. More efficient control of quality is expected with the installation of new screening and refining equipment, improved caliper control, and a new head box for the forming machine. Improvements in the dryer and enlargement and modernization of the plant laboratory also are planned.

Norman O. Cruver, president Cruver Door Co., and a partner in the Cruver, O'Neil Sales Co., Tacoma, Wash., and formerly president of the Wheeler Osgood Co., has been appointed price executive for the Lumber and Wood Products Division of the Office of Price Stabilization. Cruver was once president of the Douglas Fir Plywood Association. He was also an officer of the Fir Door Institute.

N. Floyd McGowin, president of W. T. Smith Lumber Co., Chapman, Ala., has been named a member of the board of directors of the Louisville & Nashville Railroad. He is also a director of the Waterman Steamship Corp., the Merchants National Bank of Mobile, and president of American Forest Products Industries, Inc.

Harold K. Wilson has been named manager of the New Product Department of Georgia-Pacific Plywood & Lumber Co. He will have his headquarters at Olympia, Wash.

WIRE ROPE

Roebling Chokers and Arch Lines are products of thousands of tests by engineers and logging men

YOU PAY FOR THE BEST when you buy wire rope. And you *get the best* when you buy Roebling Preformed "Blue Center" Steel Wire Rope. "Blue Center" steel is an exclusive Roebling product . . . gives rope the extra toughness that spells long life . . . service economy that really counts. Besides that, Roebling Preformed can be cut without seizing . . . always spools better . . . reduces vibration and whipping . . . doesn't tend to set or kink.

Roebling makes a wide range of wire rope . . . brings you the right construction, grade and size for top performance and economy on each installation. Have your Roebling Field Man help select the *best* rope for your particular requirements. And for maximum savings, get his suggestions on the proper use and maintenance of wire rope. John A. Roebling's Sons Company of California — San Francisco — Los Angeles — Seattle.

ROEBLING

Atlanta, 934 Avon Ave ★ ***Cambridge,*** 31 Carleton St ★ ***Chicago,*** 5525 W. Roosevelt Rd ★ ***Cincinnati,*** 3253 Fredonia Ave ★ ***Cleveland,*** 701 St. Clair Ave, N.E. ★ ***Denver,*** 4801 Jackson St ★ ***Houston,*** 6216 Navigation Blvd ★ ***Los Angeles,*** 216 S. Alameda St ★ ***New York,*** 19 Rector St ★ ***Odessa, Texas,*** 1920 E. 2nd St ★ ***Philadelphia,*** 230 Vine St ★ ***San Francisco,*** 1740 17th St ★ ***Seattle,*** 900 1st Ave. S. ★ ***Tulsa,*** 321 N. Cheyenne St

Hugh McPhail, general manager of Brooks-Scanlon, Inc., Foley, Fla., who died in Jacksonville, Fla., was a native of Ontario, Canada, and had been associated with the lumber company for many years, moving to Florida when operations were transferred there from Kentwood, La., 36 years ago.

Crescent City Plywood Corporation, a wholly owned subsidiary of the Peninsula Plywood Corp., Port Angeles, Wash., plans to erect a new plant on a site near Crescent City, Calif. The new plant is expected to get into operation next fall.

Timber scaled in British Columbia in 1950 topped all previous records, with a total of 4,406,328,439 feet, compared with 1949's 3,877,156,149 feet. Douglas fir accounted for 1,812,607,773 feet of this total, and hemlock nearly a billion feet.

J. V. Perrin of Brown Corp., Quebec City, Canada, has been elected president of the Quebec Forest Industries Association with D. A. Gillies and R. S. Armitage being re-elected vice-presidents.

More than 225 banks in Georgia have cooperated in the conservation program through the purchase of 125 pine seedling planting machines. These are loaned out to small land owners on a "first come—first served" basis. The acquisition has been effected through a joint program promoted by the Fulton National Bank of Atlanta, Ga., the Georgia Bankers' Assn., the Southern Pulpwood Conservation Assn., the Georgia Forestry Assn., and the Soil Conservation Service.

Evergreen Products Co., Evergreen, Ala., has been acquired by the W. T. Smith Lumber Co., Chapman, Ala. The company produced a variety of lumber products during and following World War II. It probably will be operated as a concentration yard by the new owners. Evergreen is about 30 miles south of Chapman. The company also operates plants at Greenville and Linden, Ala.

The L. D. McFarland Company has transferred John L. Timm from its Sandpoint, Idaho, operations to its West Coast Division with headquarters at Milwaukie, Ore. Timm is a graduate of the School of Forestry, Univ. of Mont., and has been with the McFarland organization for the past five years as forester and assistant to F. R. Schedler, manager of production and buying of cedar, larch, and lodgepole pine poles and piling.

L. C. Hart, Jr., who had been serving as management assistant for the Georgia Forestry Commission, has joined the West Lumber Co., Atlanta, Ga. His position, according to announcement by Guyton DeLoach, Commission director, has been filled by promotion of James C. Turner, Jr., his management assistant. Lester L. Lundy has been named to Mr. Turner's old post.

Columbia Door Co., Portland, Ore., has purchased the plant it previously operated on a lease basis. This sale by Leo J. Hanley for nearly $200,000 includes a 3-acre site, machinery, and 8 plant buildings.

Paul F. Hursey, vice-president of Kurth Lumber Co., has been elected president of the Jasper (Texas) Chamber of Commerce.

Dr. George G. Marra, recently joined Washington State college's industrial research division, Pullman, Wash., as head of the wood technology section. Dr. Marra comes to WSC from West Virginia University where he was engaged in research on test specimens for wood adhesives. Under Dr. Marra, studies of methods of making wallboard from wood chips and sawdust are being undertaken, and complete facilities for pulping research are being installed.

Washington Hardboard Products Co., which is starting construction of a hardboard plant at South Bend, Wash., has engaged Edward L. Piernick as chemical engineer. He has been identified with the glue and plywood industry for several years. He will have charge of installing equipment in the new plant.

Better Veneer Peeled Faster

At Puget Sound Plywood

NEW!

VENEER LATHE DRIVE and FOLLOWER DRIVES

Increase Production... Reduce Costs

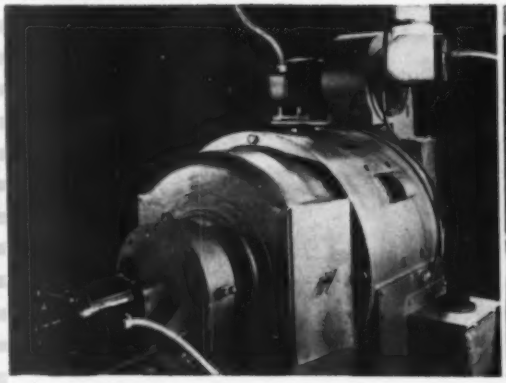
According to management and mill workers in the Tacoma mill of Puget Sound Plywood Co., Inc., this outstanding new drive system operates at ⅓ the cost of steam engine drive and also gives them:

1. Increased output of top quality veneer since maximum desired peeling speed set by operator is held automatically through all log diameters without further adjustment.

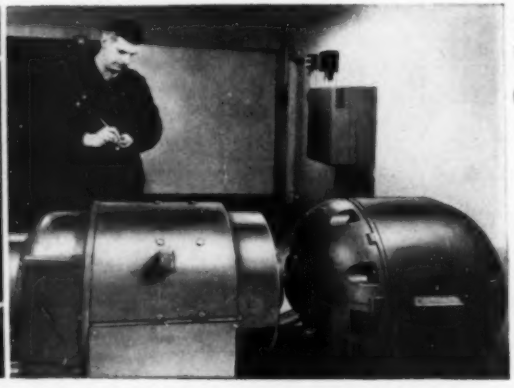
2. Reduced waste because faster stopping through regenerative electrical braking prevents needless splitting of defective logs. Quick reversing allows clearing of breaks in log without disengaging knife mechanism . . . no more wasting of full circumference of veneer in getting thickness back on gauge when knife again starts peeling. Tipple and tray speeds match and accurately follow lathe sheet speed, eliminate tearing and buckling of veneer

3. Reduced maintenance cost because continuous, accurate control of lathe speed prevents speeding up even while "cutting air" during round-up and slabbing . . . reduces lathe knife and bearing maintenance.

4. Fuel savings by eliminating wasteful consumption of expensive hog fuel for steam drives which are notorious "steam hogs." Also, boiler capacity is released for other uses around the mill.

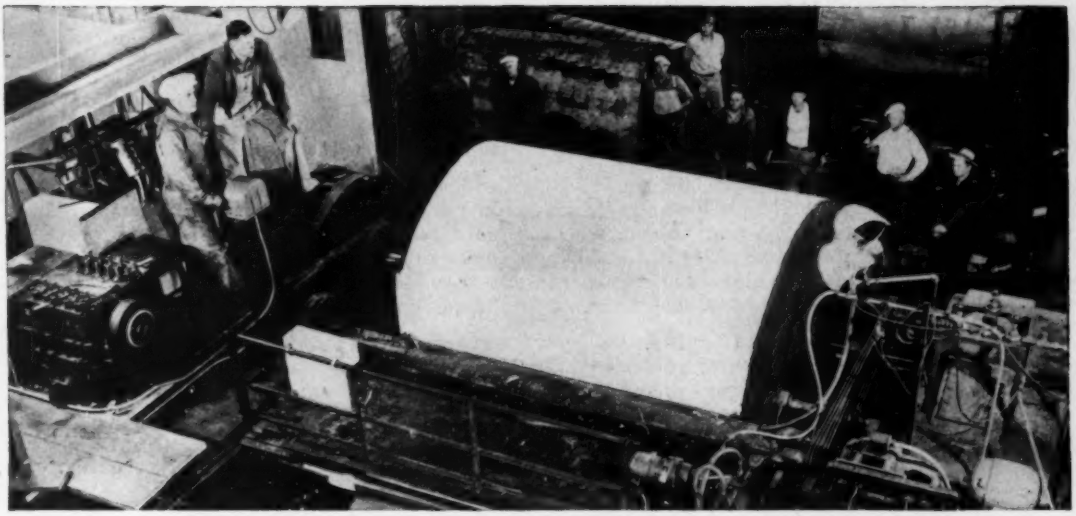


Lathe drive motor. Sturdy Type CD d-c motor with overspeed switch, tachometer generator, and blower. Latter assures continuous motor cooling even when lathe is stopped . . . minimizes maintenance.



Main motor-generator set includes a-c motor, d-c generator, and exciter, converts incoming a-c power to d-c for the lathe drive motor. Units are all mounted on a common base to simplify installation.

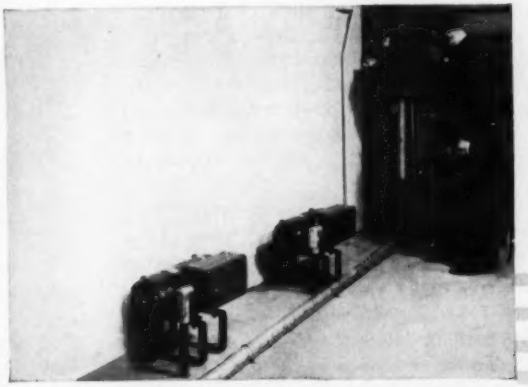
You can put your confidence in—



Controlled by the operator through the master control switch at left, this lathe is shown peeling a log at the Tacoma Mill of the Puget Sound Plywood Company, Inc. Controlled constant speed is held automatically through all log diameters by the new, completely coordinated, amplidyne-controlled General Electric lathe drive and associated electronically controlled tipple and tray drives.

To Make Sure Your Drive Is Right

A veneer lathe's power requirements depend on many factors such as the length of log, thickness of cut, log diameters, kind of wood being peeled, whether it has been soaked or steamed previously, sharpness of knife, etc. G-E sales engineers, experienced in the lumber industry's electrical problems, can help you choose the right drive for your average operating conditions. Contact your nearest G-E sales office today for more information.



Two amplidyne motor-generator sets, one for motor field and one for generator field, operate with rheostat and motor-mounted tachometer generator to regulate drive-motor speed.

WESTERN PLANTS OR SERVICE SHOPS: Anaheim, Denver, Los Angeles, Oakland, Ontario, Portland, Richland, Salt Lake City, San Diego, San Francisco, San Jose, Seattle. WESTERN SALES OFFICES: Albuquerque, Bakersfield, Butte, Denver, Eugene, Fresno, Los Angeles, Medford, Oakland, Pasco, Phoenix, Portland, Riverside, Sacramento, Salt Lake City, San Diego, San Francisco, San Jose, Seattle, Spokane, Stockton, Tacoma.

Want More Data?

Section A656-18
General Electric Co.
Schenectady 5, N. Y.

Please send me your bulletin, GEA-5596, which describes the new G-E Electric Veneer Lathe Drive. Bulletin needed for:

( ) Reference purposes
( ) Planning immediate project

Name .....
(Please Print)
Company .....
Position .....
Address .....
City ..... **Zone** ..... **State** .....

GENERAL ELECTRIC

Winter Brothers Lumber Products, Inc., Oak Park, Ill., has opened a branch sales office at Clearwater, Fla. This new office will be in charge of T. J. (Tommy) LeDuc, a native of Florida.

W. C. Abendroth, Robbins Flooring Co., Reed City, Mich., has been re-elected president of the Maple Flooring Manufacturers Association for the fifth year. Other officers are: D. S. DeWitt, Oconto, Wis., vice-president and W. W. Gamble, Jr., White Lake, Wis., treasurer. L. M. Clady, Chicago, is secretary-manager. Mr. Abendroth remarked that the industry last year experienced a record in housing construction which consumed more hardwood flooring than even the most optimistic producer anticipated.

J. W. Copeland, president and general manager of the Copeland Lumber Co., Portland, has been elected president of the Western Retail Lumbermen's Association. His company and affiliated companies operate 43 yards up and down the west coast.

Eberly Thompson, vice-president of the M & M Woodworking Co., Portland, Ore., has been named president of the Fir Door Institute. He succeeds Herman Snider. Other officers are: Charles E. Devlin, general sales manager, Simpson Logging company, Seattle, vice-president; J. P. Simpson, vice-president and general manager, Buffelen Manufacturing company, Tacoma, secretary; Paul M. Smith, secretary and general sales manager, Wheeler Osgood company, Tacoma, treasurer, and Snider, trustee.

E. P. Stamm, logging manager of Crown Zellerbach Corp., Portland, Ore., has been elected to board of directors of American Forestry Association, Washington, D.C. He has been prominently identified with logging and forestry work in Pacific Northwest upward of 30 years and with C-Z since 1926.

One of Southern California's oldtimers recently completed a re-organization of management and sales force—the E. K. Wood Lumber Co., with main office in Vernon, Calif. The various offices have consolidated into a district unit with C. R. DeVaney appointed as general manager for the entire Southern California district. O. R. Hall is sales manager for the Southern California division; M. E. Cowling, manager of the Los Angeles operations; Earl Calk, comptroller, Southern California; William Harrison, sales manager, Los Angeles; George Cheney; manager of the Van Nuys yard; Fred Wood, manager, line yards; John Gray, manager, Long Beach yard; Dick Smith, master mechanic for the entire Southern California district. Officers of the company remain the same, with W. B. Wood heading the Southern California organization. At the time of the re-organization, the Red Anchor Dock and Steamship Co. in Long Beach was appointed as the company's handler and storage agent for waterborne lumber.

The Sixth annual Olympic Logging Conference will be held at Victoria, B.C., April 19-20. Headquarters and meetings will be at the Empress Hotel. Theme of the conference will be Forest Practices, Safety, Forest Fire Controls. A. N. Hartnagel is Chairman and Oliver Latvala, secretary. Both are from Port Angeles, Wash.

The Burns-Yaak River Lumber Co., Troy, Mont., of which James D. Burns is president, has sold its 40,000 foot sawmill and planing mill to the J. Neils Lumber Co., of Libby, Mont. The new owners expect to continue operation of the plant.

David Graham, financial vice-president of the Weyerhaeuser Timber Company, Tacoma, Wash., has been appointed chairman for 1951 of the National Association of Manufacturers' Committee on Conservation of Renewable Natural Resources.

Canadian Forest Products Ltd., Vancouver, B.C., is said to have acquired the Sorg Pulp Company's plant at Port Mellon, B.C., and expects to get the mill into operation by May 1. The plant has not operated for some two years.

F. O. Marion has been appointed sales manager for Masonite Corporation, succeeding the late Walter G. Stromquist, whose assistant he had been for the past 14 months. He will direct all sales activities, including advertising and sales promotion.

This Is Really One For The Book!

FEW PEOPLE would expect a blasting cap plant to be one of the safest places to work. Yet Atlas workers, on December 6, 1950, completed five years of making Manasite blasting caps and electric blasting caps without a single lost-time injury! During this period, they produced well over 250,000,000 of these detonators.

The last injury serious enough to send an employe home from work, five years ago, was a wrenched back. The one before that, a bruised ankle. In fact, no lost-time injury has been caused by an explosion in the plant since Atlas converted to Manasite blasting caps and omitted fulminate of mercury as an ingredient in these products some twelve years ago.

Little did anyone realize, then, the new degree of safety which would be made possible in the plant, as well as in the quarries, mines and construction jobs where blasting caps are used. Thanks to pioneering by Atlas research, engineers and experienced production employes, the safety of making and using blasting caps has made a great forward stride. Manasite detonators give greater effectiveness to the safety precautions which must always be followed in handling explosives.

Manasite is typical of Atlas contributions to safer, more effective, and more economical blasting. That's why you can expect to get the *right* answers to blasting problems from Atlas—originator of Manasite detonators and the famous ROCKMASTER "16" Blasting System.

Offices in Principal Cities

ATLAS EXPLOSIVES
"Everything for Blasting"

CHEMICALS ATLAS EXPLOSIVES

SAN FRANCISCO 4, CAL. ATLAS POWDER COMPANY SEATTLE 1, WASH.

"Cat" Bulldozer

AMERICA'S ALL-PURPOSE TOOL

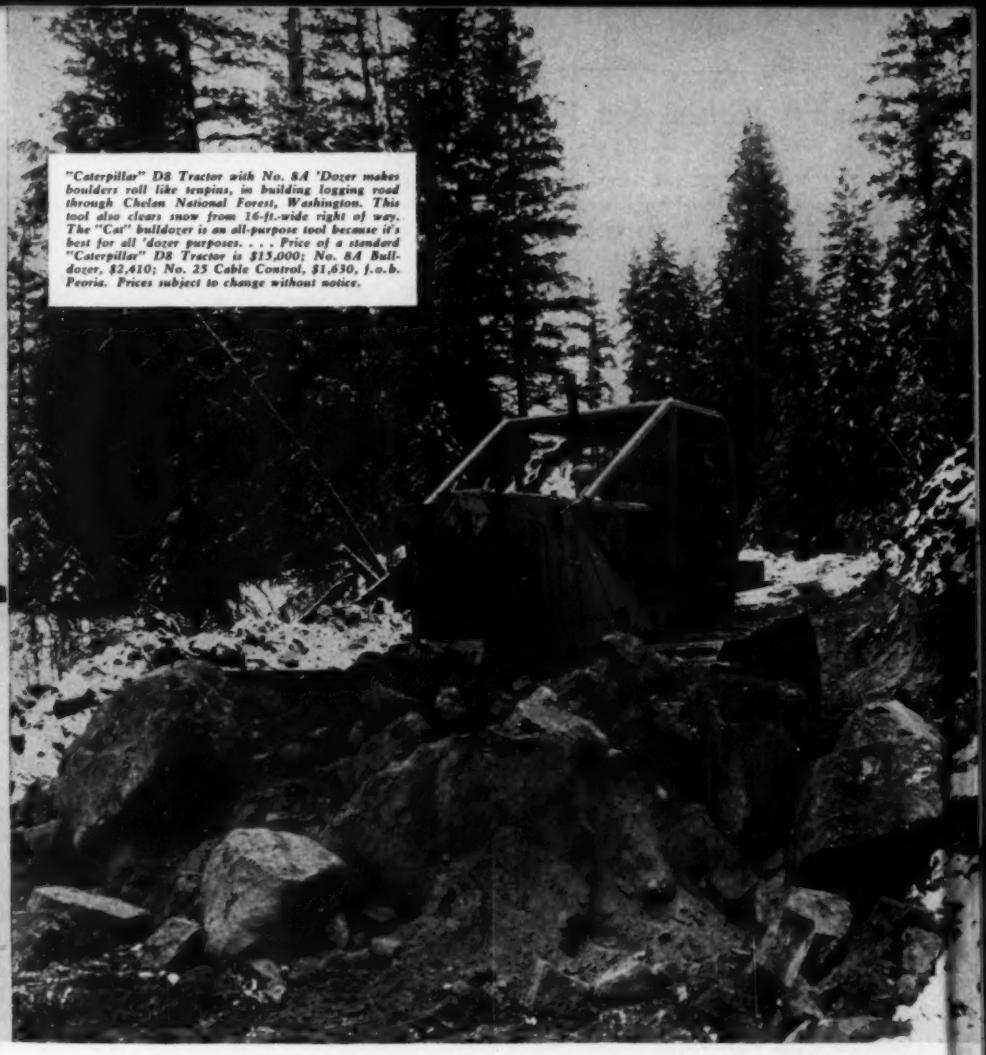
HOWARD WELLER, Superintendent of the Twisp-Wagner Lumber Co., Twisp, Washington, says of his "Caterpillar" Bulldozer: "'Cat' equipment is the best equipment on the market. Easy to maintain, and easy to start and operate in cold weather. They're so versatile you can use 'em any place!"

Mr. Weller likes this "Cat" D8 Tractor with matching 'dozer for the job of building 40 miles of logging road through the Chelan National Forest, because he knows the importance of log road construction. And this job has to be right—road is built to Forestry Service specifications and will be permanent. This power tool not only does a top job, but it wears longer. And it's always ready for tomorrow's job.

These machines give you matched design—tractor and 'dozer built to work together. This rugged team is a bear at meeting work schedules. Sturdy construction and quality materials enable it to keep punching full time without down-time, and the special steel cutting edge of the blade hammers through the toughest going. Most important of all, the precision methods used in "Caterpillar" factories build extra years of life into these bulldozers.

For help with your equipment problems, see your "Caterpillar" dealer *now*. Today's expanding military program has high priority. But it is recognized that our national preparedness depends upon stepped-up civilian production too. We must have more lumber, coal, food and essential ores. We must continue to build and improve America's vital network of highways. So your "Caterpillar" dealer is especially interested in meeting your needs—through equipment replacement and by exercising his working partnership with you to keep the machinery you have *on the job*.

CATERPILLAR, SAN LEANDRO, CALIF.; PEORIA, ILL.



"Caterpillar" D8 Tractor with No. 8A 'Dozer makes boulders roll like tenpins, in building logging road through Chelan National Forest, Washington. This tool also clears snow from 16-ft.-wide right of way. The "Cat" bulldozer is an all-purpose tool because it's best for all 'dozer purposes. . . . Price of a standard "Caterpillar" D8 Tractor is $15,000; No. 8A Bulldozer, $2,410; No. 25 Cable Control, $1,630, f.o.b. Peoria. Prices subject to change without notice.

"CATERPILLAR" BULLDOZER EXTRA FEATURES

1 Tractor and 'dozer *broken to harness*, and a size for every need.

2 Moldboard curvature for active, *rolling*, higher production loads.

3 Box section side arms—extra thick at points of greatest stress.

4 Choice of straight or angling type of blade, simple to maneuver and easy to adjust or detach.

5 Your choice of hydraulic or cable controls.

6 The power of the "Caterpillar" Diesel Engine is geared to blade *capacity*.

CATERPILLAR

DIESEL ENGINES · TRACTORS · MOTOR GRADERS · EARTHMOVING EQUIPMENT

C. E. O'Connor, Jr., has been elected as vice-president of The Diamond Match Company. He has been special assistant to President R. G. Fairburn since 1947. Previously he was vice-president of the B-F-D Company which was acquired by Diamond in that year.

Lumber companies and paper mills in the East Texas area have been urged by A. M. Dantzler, chairman of the southern division, National Forest Industries Communications, to expedite their plans for the establishment of this facility in connection with their woods operation. The Petroleum Industry, which shares the frequency band assignment with forest industries, has been expanding its radio field use rapidly whereas the Texas forest industries have not come forward. Mr. Dantzler urges that forest industries operations should keep up their plans to use radio else the band allocations may be lost to other fields. Mr. Dantzler is identified with L. N. Dantzler Lumber Co., Perkinston, Miss.

George Rauch has been named an assistant logging superintendent of Potlatch Forests Inc., succeeding "Boots" Edelblute who was killed as a result of a tree falling on his jeep during a wind storm.

Announcement has been made at Forks, Wash., that a new company known as the National Plywood Co. Inc., of Port Angeles, Wash., will build a $1,250,000 plywood plant west of Lake Pleasant on the Port Angeles Western Railroad. Officers are: Sydney C. Tozier, Port Angeles, president; Frank Henry, Forks, vice president; Joseph H. Johnston, Port Angeles, secretary; and Ray Kidd, Port Angeles, treasurer.

Controlling interest of Juneau Lumber Co. sawmill at Juneau, Alaska, has been purchased by Columbia Lumber Co. which operates mills at Sitka and Whittier. The Juneau mill, to continue to be known as Juneau Lumber Co., will start up this spring with completion of current improvement program, including rebuilding of headrig, a new trim saw, and addition of live rolls and lift skids. Production is expected to be about 60M per 8 hr. shift. Plans call for addition of a Swede gang mill this summer, according to Tom Morgan, president of Columbia Lumber Co.

Edward B. Wilber, for the past thirty years associated with the Aluminum Company of America and at present district sales manager for Alcoa in New York, has been elected president of the American Lumber & Treating Company, Chicago. He succeeds J. F. Linthicum, who is retiring after fourteen years' service.

At the annual meeting of the Northern Hemlock and Hardwood Mfgrs. Association at Escanaba, Mich., Feb. 16, all officers were reelected. A. E. Swanke, Tigerton Lbr. Co., Tigerton, Wis., president, declared the period ahead will be one of uncertainty. He warned that prices now established may be in effect for years. R. A. Colgan, National Lumber Manufacturers Association, made a guess that definite lumber price ceilings would not be forthcoming within the next ninety days. Donald S. DeWitt reported for the Maple Flooring Manufacturers Association that present orders were 60% over the same date a year ago. Secretary-manager O. T. Swan said there is a distinct threat to the free enterprise system in the present predicament.

J. Harold Houghland has been elected president of the British Columbia Wholesale Lumber & Shingle Association, succeeding Charles P. Sullivan. H. Wilson Gray is the new vice-president, and directors are William H. Hoover, W. E. (Ted) Parker and Thomas P. Barnett. Douglas H. Mathews is secretary.

The Willamette Valley Logging Conference in the past held in May, has been scheduled for April 26-27-28 at Eugene, Ore. Headquarters will be at the Osborne Hotel.

Bloedel, Stewart & Welch, Ltd., Vancouver, B.C., is placing orders for the construction of a plywood plant to be located at Port Alberni, west coast of Vancouver Island, adjacent to the company's lumber, shingle and pulp mills. Prentice Bloedel, president of the company, told The LUMBERMAN that the new plant will be designed to produce 30,000,000 square feet annually.

WHERE PRECISION, SPEED AND POWER Pay Off

BUCYRUS ERIE

South Milwaukee, Wisconsin

Loading the big ones deep in the tract, keeping logs moving at transfer points, digging out the access roads that move timber . . . these are some of the spots where Bucyrus-Erie power, speed and precision pay off in logging profits.

Responsive, direct-connected "full-feel" controls, for example, save seconds every cycle. Strong, simple parts and accessible machinery reduce maintenance time, keep Bucyrus-Eries working an effective pace shift after shift. Ease of convertibility means versatility for handling dozens of jobs in your territory. Your Bucyrus-Erie distributor will be glad to give you all the details on these famous 3/8- to 4-cubic yard machines.

"It's simple, always cuts true and you can't wear one out!"

Users say: "The more you know about cutter heads, the more you appreciate the way a Jones & Orth head is made!"

When you take one apart—check its design and construction — you get a better idea of why they perform as they do.

Take our popular H-Type head for instance, such as the eased-edge model shown at the right. Knives on this head can be used right down to the last ¾ inch without change of pattern OR cutting angle!

You'll find a minimum number of parts too, and the greatest precision in adjustments plus a maximum of safety.

No wonder Jones & Orth cutter heads are the choice of so many shop superintendents with a lifetime of woodworking experience!

Find out NOW what Jones & Orth cutter heads will do for your shop! Write today for new catalog, and name of dealer nearest you. Address either our Seattle or Memphis branch!

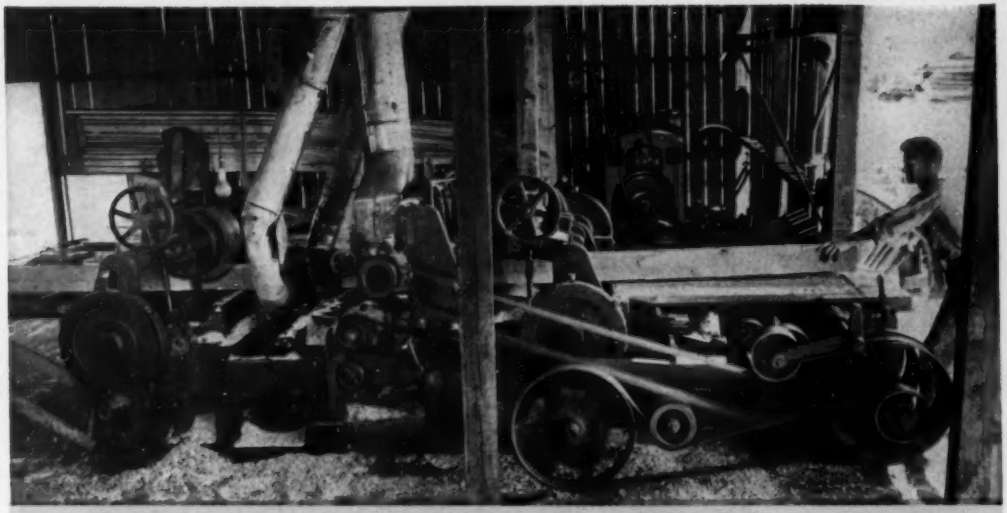
Need specially designed cutter heads? Let our engineers help! Write us in detail. Prompt service!

JONES & ORTH

CUTTER HEAD COMPANY

385 SOUTH MAIN STREET
MEMPHIS 3, TENN.

BOX 3864
SEATTLE 14, WASH.



This Diesel Starts at 20 Below

A 4-cylinder GM Series 71 Diesel drives a 6 x 24 planer at 3600 R.P.M. and a 36" blower at 1800 R.P.M. in the R. C. Lovel mill. Production averages 25,000 ft. per day of 2 x 4 and 2 x 6 pine and fir, with some 6 x 6 and 6 x 8.

"EVEN at 20° below, our GM Diesel has never given any trouble starting," says Darrell Lannigan, planer superintendent at the R. C. Lovel mill, Plummer, Idaho.

Just fill it up, push the button, and the GM Diesel is running. No auxiliary gas engines for starting—less risk of fire, too.

But, these aren't the only advantages. GM Diesels are 2-cycle—with power at every piston downstroke. That makes them more powerful, smoother in operation and a lot more compact.

There are no high-pressure fuel lines to break—unit injectors pump, meter and inject the fuel, and are as easy to replace as spark plugs. All engine parts are easy to get at and parts are interchangeable between engines of different size.

Put these rugged engines to work in your mill and you'll agree with operators everywhere that General Motors Series 71 and 6-110 Diesels are 'tops" for low-cost, productive power.

DETROIT DIESEL ENGINE DIVISION

SINGLE ENGINES . . . Up to 200 H. P. **DETROIT 28, MICHIGAN** MULTIPLE UNITS . . . Up to 800 H. P.

GENERAL MOTORS

GM GENERAL MOTORS DIESEL POWER

DIESEL BRAWN WITHOUT THE BULK

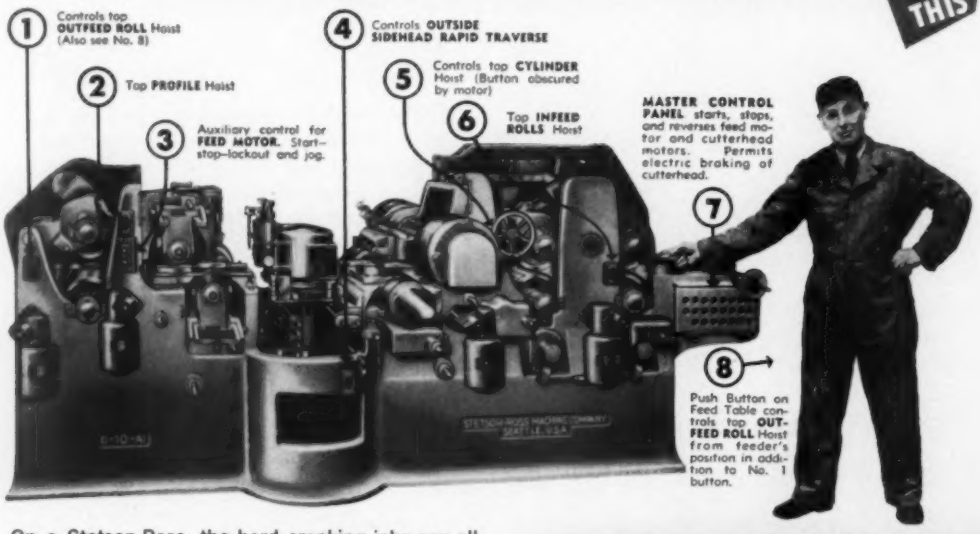
Evans Engine & Equipment Co., Inc. SEATTLE 9, WASHINGTON
Mountain Tractor Co. MISSOULA, MONTANA
Yukon Equipment, Inc. (Alaska) SEATTLE 4, WASHINGTON
Moore Equipment Co., Inc. STOCKTON, CALIFORNIA
Gundersen Bros. Engineering Corp. PORTLAND 9, OREGON
Anderson-O'Brien Co. LOS ANGELES 21, CALIFORNIA
Modern Machinery Co., Inc. SPOKANE, WASHINGTON
West Coast Engine & Equipment Co. BERKELEY, CALIFORNIA
Southern Idaho Equipment Co. BOISE, IDAHO
Seitz Machinery Co., Inc. BILLINGS, MONTANA

Does your whole planer production stop while your operator does this?

OR

Does your planer operator instantly press buttons to adjust electrically top feedworks, top heads, and outside sidehead when changing sizes or clearing breakups.

LIKE THIS


1 Controls top OUTFEED ROLL Hoist (Also see No. 8)
2 Top PROFILE Hoist
3 Auxiliary control for FEED MOTOR. Start–stop–lockout and jog.
4 Controls OUTSIDE SIDEHEAD RAPID TRAVERSE
5 Controls top CYLINDER Hoist (Button obscured by motor)
6 Top INFEED ROLLS Hoist
MASTER CONTROL PANEL starts, stops, and reverses feed motor and cutterhead motors. Permits electric braking of cutterhead.
7
8
Push Button on Feed Table controls top OUTFEED ROLL Hoist from feeder's position in addition to No. 1 button.

On a Stetson-Ross, the hard cranking jobs can all be done by push button. This means quicker setups, quicker clearing of breakups, more actual running hours every day. More dollars banked every month.

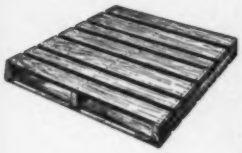
Facts about the "years ahead" Stetson-Ross will be mailed to you promptly upon request.

STETSON–ROSS MACHINE COMPANY
SEATTLE 4, WASHINGTON

Export Division, 301 Clay St., San Francisco 11, California

A NAME FAMOUS FOR WOOD PRODUCTS

In its modern West Coast wood research laboratories, Evans is constantly developing new methods of processing wood for increased strength and greater utility. This research has resulted in a variety of new wood products exclusive with Evans as well as the continued improvement of existing products.



PALLETS

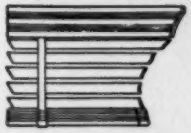
When you specify Evans Pallets you call upon a wealth of experience in material handling problems and wood products manufacturing.

Evans has specialized in loading engineering and the development of principles and devices to speed material handling and shipping while reducing cost, damage and waste.

Your specifications in Double-Faced Pallets, Single-Faced Pallets, Wing Type Pallets or Hand Transportation types can be efficiently furnished.

"EVANETIAN"* BLIND SLATS

Rails and Facia



Finished from high-grade Port Orford Cedar and old growth, soft-textured Douglas Fir to meet exacting specifications, Evanetian slats, rails and facia are molded — not sanded — to glassy smoothness — easing the job of the Venetian Blind manufacturer in producing a better product. Also available in Port Orford Cedar in limited quantities.

Only from Evans do you get Evanetian quality.

*T. M. Reg. U. S. Pat. Off.

MOLDED PLYWOOD

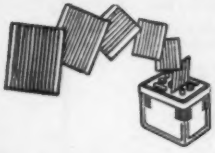
Chairbacks and Seats

Hundreds of thousands of these high-grade molded plywood chairbacks and seats have been made for discriminating furniture manufacturers in sizes and wood finishes to meet exacting specifications.

Evans exclusive process simultaneously molds and laminates veneers under heat and pressure in steel dies — producing a multiple ply construction that will not delaminate, has great strength, uniform radius, permanent shape and exceptional screw and nail-holding qualities.

LUMBER AND LUMBER PRODUCTS

Evans Coos Bay, Oregon, Plant produces a variety of standard and special wood products from Douglas Fir and Port Orford Cedar to most rigid buyer specifications. These include veneers, core stock, dimension stock, railroad ties, cable reel lagging, tie plugs, shipping blocks for automobiles, mouldings and construction lumber.



BATTERY SEPARATORS

Evans, the world's largest manufacturer of wood battery separators, is recognized as the leader in the quality battery separator field.

Using carefully selected Port Orford Cedar and old growth, soft textured, uniform grade Douglas Fir, Evans battery separators are finished to micrometer accurate tolerances to meet the individual grooving and dimensional specifications of leading storage battery manufacturers in this country and abroad.

DOUGLAS FIR PLYWOOD

Douglas Fir Plywood has now been added to the long list of quality wood products produced by Evans.

The Coos Bay Plant has just completed installation of the latest modern plywood equipment for the production of both interior and exterior plywood.

YOU CAN NOW HAVE "EVENEER QUALITY" DOUGLAS FIR PLYWOOD IN STANDARD PANELS OR CUT UP STOCK

DIRECT INQUIRIES TO NEAREST OFFICE

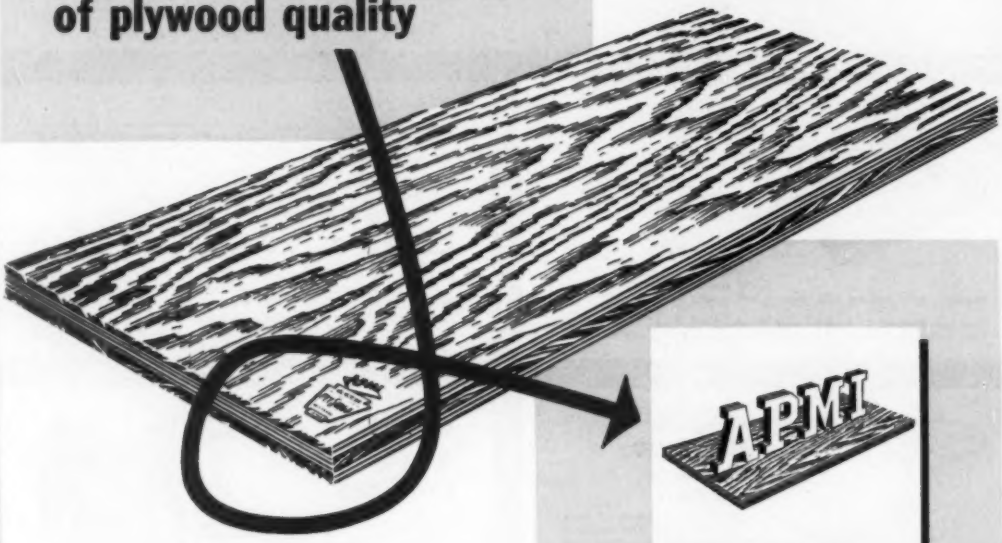
Evans Products Company

PLYMOUTH, MICHIGAN

COOS BAY, OREGON

TRADEMARKED

as well as grademarked ...your double guarantee of plywood quality



Something has been added in the labeling of plywood produced at Associated Plywood Mills, Inc. It is the APMI trademark, and you'll find it together with the DFPA grademark on both exterior-type and interior-type panels manufactured by this company.

This combination of trademark and grademark is your assurance that regardless of where you buy APMI plywood, you get the guaranteed products of a pioneer mill in the industry...There is a type, size and grade of APMI plywood for every building need... Sold from centrally located sales warehouses, and sold by experienced plywood men who welcome your inquiries for general information, for prices, for delivery schedules.

APMI SALES WAREHOUSES

Eugene and Willamina, Oregon
San Francisco, 925 Toland St., 24
Dallas, 4814 Bengal St., 9
St. Louis, 4268 Utah St., 16

APMI SALES OFFICES

519 Johnston Building
Charlotte, North Carolina
31 State St., Boston, Mass.

APMI MILLS

PLYWOOD—Eugene, Oregon
PLYWOOD—Willamina, Oregon
LUMBER—Roseburg, Oregon

ASSOCIATED

PLYWOOD MILLS, INC.

General Offices: Eugene, Oregon

SOMETHING **NEW** *Going up!*

Application of Welchboard at Wedgwood Park, Seattle: Albert Balch, Community Builder.

Resin-Fused Plastic-Faced
WELCHBOARD
Plywood Plus

THE NEW PLYWOOD PANEL WITH THE SUPERIOR SURFACE

UP IN POPULARITY

UP IN DISTRIBUTION

UP IN PRODUCTION

Since the first appearance of Welchboard in the building supply field last April, its popularity has grown with amazing strides. In less than eight months, our total production capacity has been exceeded by the demand.

Everywhere that we have been able to provide distributors with Welchboard, they have found instant success in its sale and use to builders for interior and exterior uses.

To meet the increasing demand for this exterior-type plywood with super-smooth surface added, we are installing additional production equipment. Builders have made their own tests to prove that this *different, dependable* panel material completely eliminates objectionable checking, goes up fast, builds beautifully indoors and out. Find out more about this Resin-Fused, Plastic-Faced "plywood plus." Write for the "Welchboard Catalog."

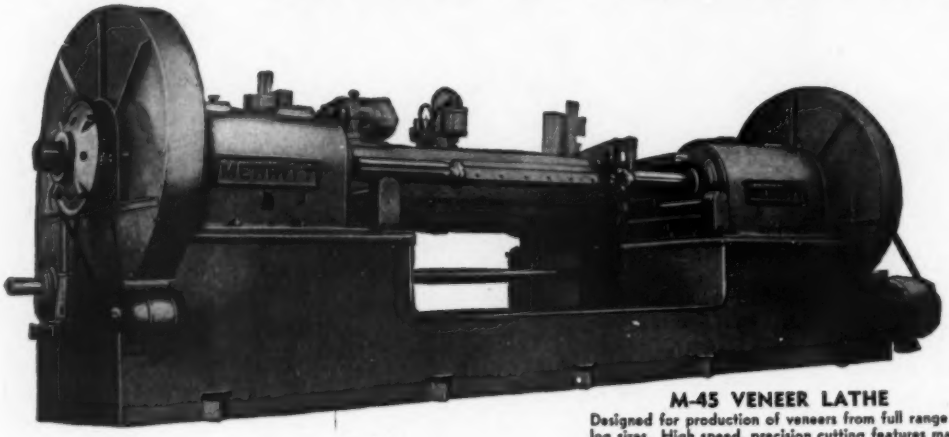
ANOTHER QUALITY PRODUCT OF

WEST COAST PLYWOOD COMPANY • Aberdeen, Washington

Manufacturers of "Tru-Bilt" Exterior-Type and Interior-Type Douglas Fir Plywood

MERRITT

Machinery and Equipment for Veneer and Plywood Mills



M-45 VENEER LATHE

Designed for production of veneers from full range of log sizes. High speed, precision cutting features maintain an outstanding record for large volume production. Swings of 42", 60", 80" and 102". Knife lengths of 54" to 132". Equipped with heavy-duty Timken and anti-friction bearings throughout.

For over 75 years, veneer and plywood mill machinery bearing the MERRITT nameplate has proved its dependability throughout the world.

Working in close contact with leaders of the veneer and plywood industry, MERRITT engineers have looked ahead, incorporating many advanced design features that mean larger volume production, increased efficiency and long-range economy.

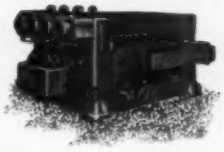
The combined experience of both the Merritt and Solem organizations, plus quality materials throughout, assure the user of the utmost in performance and dependability.

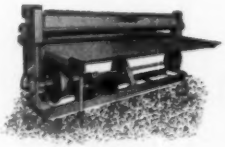
Operators of MERRITT machinery and equipment are assured by the Merritt-Solem Corporation of prompt and reliable service. Replacement and spare parts orders will be given immediate attention.

Merritt-Solem will continue to merit the faith of the veneer and plywood industry.

Solem Endless Bed Drum Sanders

High production quality finishing; available in 2, 3, and 4 drum models with 31" to 85" widths.





Production Veneer Clippers

Wide variety of sizes and models available with automatic control features.

Traveling Head Veneer Jointers

Precision machine for jointing veneer stock up to 16 feet long.

MERRITT-SOLEM CORPORATION

"MERRITT" MACHINERY FOR VENEER AND PLYWOOD MILLS

SOLEM

Lockport, New York

MERRITT

LUMBER
MILL
F
TRADE MARK
PACIFIC COAST
LUMBER PRODUCTS
★
CERTIGRADE
RED CEDAR SHINGLES
MANUFACTURED BY
CANADIAN WESTERN LUMBER COMPANY LIMITED
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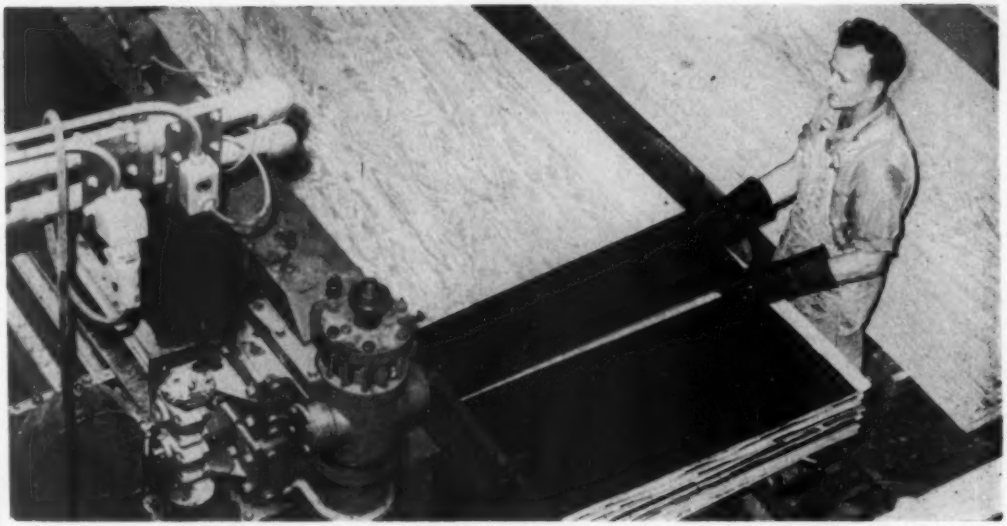

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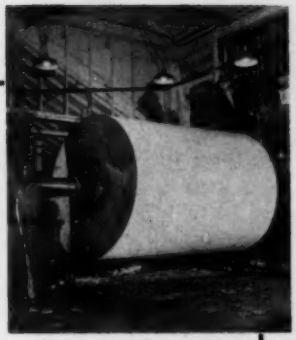

Scene in the lathe department of Western Veneer Co., Lebanon, Ore.

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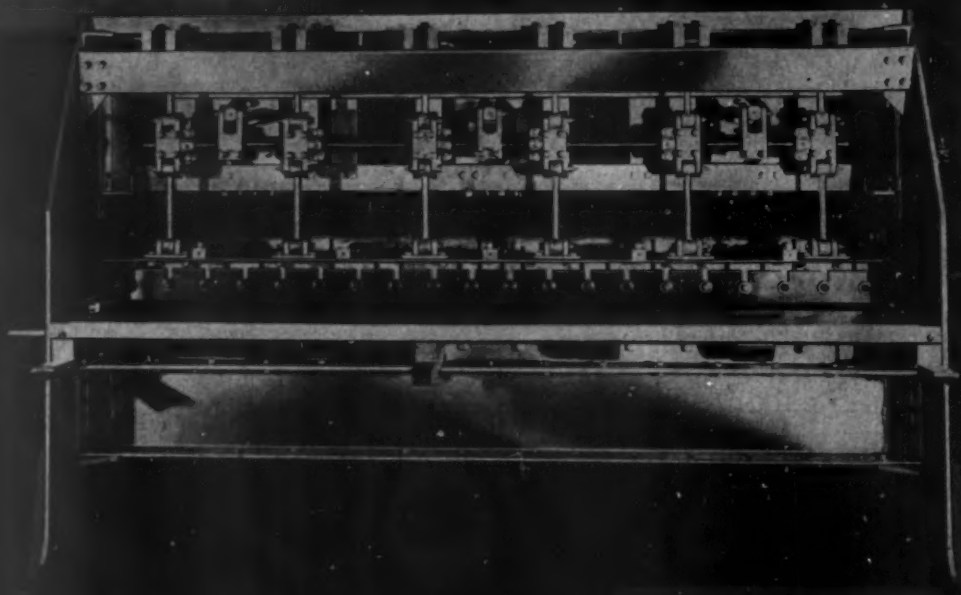

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MARCH

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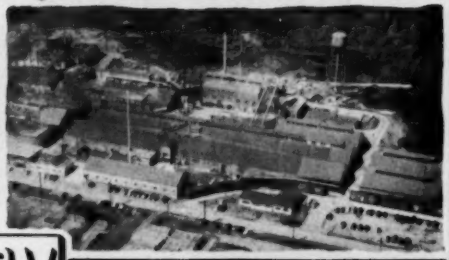

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NINETEEN FIFTY- A YEAR OF GREAT EXPANSION AND DEVELOPMENT IN DOUGLAS FIR PLYWOOD INDUSTRY

By O. HARRY SCHRADER, JR.
MANAGING DIRECTOR DOUGLAS FIR PLYWOOD ASSOCIATION, TACOMA, WASHINGTON

Once more the manufacturers of Douglas fir plywood in the Pacific Northwest, stimulated by growing civilian demand and new military requirements, have surpassed all previous production records. Evidencing their determination to stay abreast of both civilian and defense needs in 1950, the industry's 61 plants turned out 2.4 billion square feet of the all-purpose building material—the third successive year in which a new production mark has been set.

This record output is approximately 25 per cent better than the 1.9 billion square feet recorded in 1949 and it is almost two and a half times the pre-war production high reached in 1939.

New Plants

Contributing to this production and signifying the ability of the industry to maintain its record of expansion were seven new plants. Actually, the number of new plants has been on the rise since 1944 when 30 mills turned out 1.4 billion square feet, only a little more than half the present output. New plants which went into production in 1950 included Mt. Baker Plywood, Inc., Bellingham, Wash.; Multnomah Plywood Corporation, Portland, Ore.; Mutual Plywood Corporation, Eureka, Cal.; Sonoma Plywood Co., Sonoma, Cal.; Valley Plywood Co., Junction City, Ore.; Western Door and Plywood Corp., Milwaukie, Ore., and Willamette Plywood, Inc., Eugene, Ore.

Washington retains its dominant position in the industry and in 1950 the state accounted for 53 per cent of total production. Oregon and California manufacturers continued to expand their productive capacities with the development of newer log supplies. Oregon produced 40 per cent and California seven per cent.

Here are the figures that show the spectacular growth of the industry since commercial production began in earnest in the early twenties.

Douglas Fir Plywood Production Since 1924
(Computed on ⅜" basis rough)

Year	Production (in millions)	No. Plants end of year
1924	125	10
1925	153	12
1926	173	12
1927	206	13
1928	276	14
1929	358	16
1930	305	17
1931	235	17
1932	200	17
1933	390	17
1934	384	17
1935	480	17
1936	700	20
1937	725	21
1938	650	21
1939	950	23
1940	1,200	25
1941	1,620	31
1942	1,782	31
1943	1,430	30
1944	1,440	30
1945	1,200	31
1946	1,395	33
1947	1,630	39
1948	1,871	44
1949	1,899	54
1950	2,400 (approx.)	61

WASHINGTON

Year	No. of Plants	Production	Pct. of Production
1938	19	580,109,000	89
1939	20	833,335,000	87
1940	20	963,865,000	80
1941	23	1,122,557,000	69
1942	22	1,229,973,000	69
1943	22	951,993,000	66
1944	22	1,011,959,000	70
1945	22	877,534,000	73
1946	22	963,010,000	69
1947	24	1,062,166,000	65

Plastic Overlay. Workmen assembling plastic-faced plywood panels in Georgia Pacific Plywood & Lumber Co.'s Washington Veneer Corp. plant, Olympia, Wash. The overlay is bonded to the outer ply under great heat and pressure to produce a panel with a premium quality surface that has all the structural rigidity and strength of plywood, America's busiest building material. Overlays mask the grain, offer a tough, durable, satin-smooth surface, an ideal base for paint. These panels are finding rapidly expanding markets which capitalize on their premium qualities for concrete form work, exterior siding, paneling, furniture manufacture and marine construction.

1948	26	1,181,900,000	63
1949	29	1,086,001,000	57
1950	30	1,272,000,000	53

OREGON

Year	No. of Plants	Production	Pct. of Production
1938	2	69,891,000	10
1939	3	116,665,000	12
1940	5	235,135,000	19
1941	8	497,443,000	30
1942	9	552,027,000	30
1943	8	478,007,000	33
1944	8	428,041,000	29
1945	9	322,466,000	26
1946	11	431,990,000	30
1947	13	547,834,000	33
1948	14	628,872,000	33
1949	20	709,149,000	37
1950	24	960,000,000	40

CALIFORNIA

Year	No. of Plants	Production	Pct. of Production
1947	2	20,000,000	1
1948	4	60,228,000	3
1949	5	103,850,000	5
1950	7	168,000,000	7

More Exterior

The year also saw an increase in the production of Exterior type plywood with the waterproof bond. In 1950 the production of Exterior type accounted for almost 25 per cent of total output compared with 21 per cent the previous year. Exterior production in 1950 topped 1949 production by 172 million square feet. Factors responsible for this were the growing acceptance of plywood for siding other outdoor applications and marine construction.

The versatile "one-side" panels accounted for 50 per cent of production of both Exterior type plywood (Plyshield A-C) and the Interior type (Plypanel A-D). About 20 per cent of production of both types was in the two-side grades (A-A and A-B).

Military Requirements

The production feats achieved by the panel makers were matched by a rising demand for this rugged, versatile material. Most important demand factor in 1950, of course, was defense production and military activity. At the beginning of the year, military demand was negligible but at year's end direct military orders were taking 20 per cent of total output and indirect orders accounted for an estimated five to ten per cent more.

Civilian demand, fired by the record number of new housing starts, was strong throughout the year. Accompanying this lucrative outlet was a marked increase in the use of the panel material in heavy construction and industry with an estimated ten per cent of output going into concrete forms, a major market for plywood.

California once more took the lead in consumption of fir plywood by states. During the year, California used 14 per cent of total production although it has only seven per cent of the population. Illinois with six per cent of the population took nine per cent of production. New York used eight per cent, Washington seven per cent and Oregon three per cent.

Strong Demand

Despite the expected decrease in new housing starts, there is indication that the demand for plywood in the year ahead will continue to grow. Of course, much of this growth will be stimulated by defense needs which have sparked the nation's plant expansion and carbuilding. Two developments in 1950 are indicative of the share plywood will have in this expansion. More than a million square feet of plywood were used in concrete forms on the giant Lever Brothers plant nearing completion in Southern California. And only a few months ago Pressed Steel Car Co. unveiled its revolutionary combination refrigerator-box car which takes more than 10,000 square feet of plywood per car.

The need for plywood in industry where end products do not necessarily reflect the demand picture is on the rise as the nation's industrial plant gears for possible war. Plywood is the logical material for many types of crating, mock-ups, and plant equipment. It is widely used for lockers, cold rooms and in a host of other special industrial applications.

This shift was recognized by the manufacturers during the year and is reflected in the industry's hard-hitting sales promotion campaign designed to maintain plywood's preferred position in present markets and to create still more markets for the "Wood of A 1,000 Uses." The program includes specifier, farm, consumer and industrial advertising; publicity and direct mail, and personal contact with key specifiers through field representatives.

Allied Products

One of the most significant developments in 1950 was the manufacturers' increasing interest in allied products—a fluid field with an unknown potential which promises new market vistas and spectacular economies in efficient utilization of raw materials. Indicating the growing importance of this field is the speed-up in production of overlays. Total production of plastic-faced panels in 1950 was almost four times that of 1949.

Latest entry in the field is Anacortes Veneer, Inc., of Anacortes, Wash. The worker-owned organization launched a million-dollar expansion program in 1950 and went into production of overlays only a few weeks ago. This brings to five the number of plants producing some kind of plastic-faced plywood panels. They are, in addition to Anacortes, Harbor Plywood Corporation, Aberdeen, Wash.; St. Paul and Tacoma Lumber Co., Tacoma, Wash.; Washington Veneer Corporation, Olympia, Wash., and West Coast Plywood Co., Aberdeen, Wash.

Indicative of the markets for this premium panel material is the spectacular 175-acre Parklabrea apartment project in which about three million square feet of plastic faced plywood was used for concrete form work.

The tough, satin smooth, surfaces and excellent painting qualities offered by the overlays have stimulated a rising demand for this specialty product for exterior siding, paneling and built-ins in home construction.

The Douglas Fir Plywood Association, the trade and promotional group for the fir plywood industry, has embarked on a comprehensive promotional effort for the makers of plastic-faced panels and is making progress in a program of laboratory testing and quality supervision similar to that which has been so successful in improving the performance of ordinary fir plywood.

New Hardboards

Another development which is being watched with keen interest throughout the industry is the application of hardboard surfacing to plywood which creates an entirely new product offering plywood's inherent structural strength and rigidity with the premium surface qualities of a hardboard. The material is expected to find a market in light construction, furniture manufacturing and special applications.

Also worth watching is the appearance of new hardboards and new hardboard manufacturers in the Northwest. The most significant phase of this developing field is the interest shown by plywood manufacturers. Panel makers who have actually started construction of hardboard plants or announced

(Concluded on Page 127)

NEW DEVELOPMENTS IN PLYWOOD MANUFACTURING EQUIPMENT

By GUS N. ARNESON

GENERAL MANAGER, SPRINGFIELD PLYWOOD CORPORATION, SPRINGFIELD, OREGON

Still young and growing, the Douglas fir plywood industry is vigorously experimenting with new equipment and new methods. A survey of developments within the past year discloses the adoption of a stimulating array of ideas for making plywood better or more economically. Throughout most of the operations in the manufacture of Douglas fir plywood there is evidence that brains, ingenuity and enterprise were thriving throughout 1950. This discussion cannot be considered a complete digest of things that are new in the industry, but only as random notes on worthwhile developments that have come to our attention.

ELECTRIC LATHE DRIVES

There is developing what appears to be a trend toward powering veneer lathes with electricity. To plywood people who have come to look upon the time-honored steam engine as the final word in lathe motive power, this is startling news. A growing list of important mills in the industry that have installed this type of equipment say that it is good news. The Kirk Hillman Company of Seattle has sold eight modern electric drives in the Douglas fir plywood industry since 1947. Four of them in 1950. The same concern reports that it now has under construction similar drives for seven other plywood factories that have placed firm orders. The General Electric Company has also made several important installations, and are planning more. It is claimed for the new type all electric drives that they give improved performance because of high starting torque; accurate and precise control of acceleration and of feed over a wide range of speed; constant horsepower output; together with reversing and instant stopping.

The all electric lathe drives are so designed that if the operator sets his control to peel veneer from the outside of a big block and does not move the control lever, the lathe will automatically adjust its own r.p.m. to produce veneer at a constant rate per minute down to the core. The operator has it in his power, however, to instantly change the speed if he so desires.

It is reported to be possible with the all electric drives to synchronize the speed of the tipple belts and the storage table belts with that of the veneer coming from the lathes, so that a change in the speed at which veneer comes from the lathe instantly results in a change of their speed.

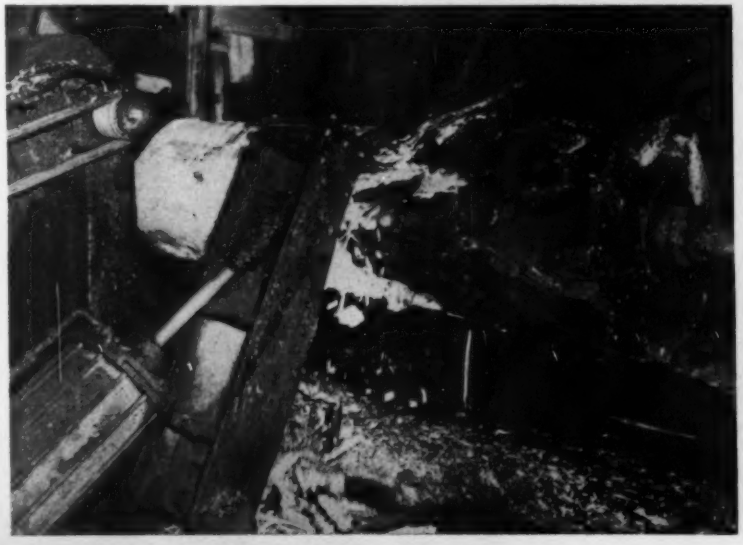
Plants that have had experience with the new drives report that production per lathe is significantly increased as a result of the tendency of the drive to maintain constant veneer cutting speed on blocks of decreasing diameter.

The electric lathe drives are particularly interesting to people whose steam generating facilities are overtaxed. This is true even for plants that make their own electricity because it takes much less steam to generate the power to run the electric drives than it does to run the conventional steam engine.

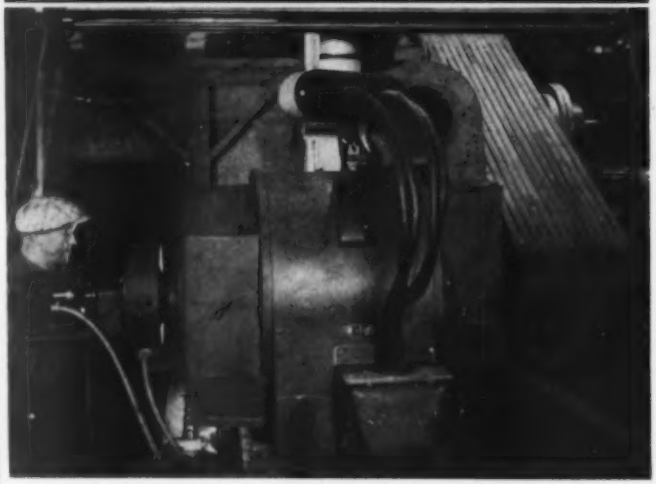
SCRAPER TYPE BARKER

The scraper type barker and the fast air-chucking device on barkers have found wide acceptance during 1950. The Ederer Engineering Company of Seattle have made at least nine such installations and had several others on order at the end of 1950.

Both the scraper type barker and the air-chuck minimize waste in the precious outer layers of expensive peeler logs. The barker, because it does not gouge into the wood as



The new barker, engineered and built by Ederer Engineering Company, Seattle, has three principal points of superiority. A new air chuck, it is claimed reduces chucking time about 90 percent; there is no slabbing when releasing the logs. The barker removes only the bark, of prime importance in getting all available veneer from every peeler log. The blade is adjustable to compensate for log taper and will bark logs of almost any contour. Both pressure control and air chuck operate with the same type of air cylinder.



This veneer lathe in the plant of the Puget Sound Plywood Co., Inc., Tacoma, Wash., is powered by one of the General Electric Company's new amplidyne-controlled drives. The master switch (handle in operators right hand) provides stepless speed control for the lathe. Valvair control valves regulate the air used in activating lathe pressure bar. Below: Type CD-1441Y 500-/1500-RPM blower-ventilated D-C motor driving 110-in. veneer lathe. Tachometer generator and overspeed switch mounted on end of motor.

does the conventional barker, and the air-chuck, because it is so rapidly withdrawn that it clears the end of the block before it falls from the chucks, thereby preventing the tearing out of a slab which is common with conventional chucks. Both of these improvements contribute also to greater production per man hour because they are faster than the conventional barker.

VENEER DRIERS

The Moore Cross-Circulation Roller Veneer Drier was introduced in 1950 and several installations have been named. Among the advantages claimed for this drier are that the large volume of air circulated parallel to the rollers has maximum opportunity to be in contact with the veneer; the drier is partitioned into zones with separate fans and re-heaters in each zone making it possible to maintain high temperatures in the green end; and that as a result of air movement transversely the chips and dirt are deposited near the doors where they are easy to remove. Relatively fast drying times are claimed for this drier.

The Coe Manufacturing Company has also entered the cross-circulation field with a 5-line 16-section installation at the Shasta Plywood Company at Anderson, which is reported to be giving excellent results drying pine veneer.

The Coe people have introduced some significant improvements in their standard double air system driers during 1950. It is claimed that the volume of air is greatly increased by the use of two fans on a single air system, and that this is an important factor in achieving reduced drying time. The late Coe driers have a drive rig that is completely equipped with anti-friction bearings. Other improvements in the design of doors, the design and construction of heaters, and in the materials used in heating coils have also been made.

GLUING EQUIPMENT

The Lamb-Grays Harbor "Air-float," whereby heavy batches of plywood can be shoved in and out of a cold press while floating on a thin film of air, is a relatively new time saver in the plywood industry.

The American Manufacturing Company has made substantial changes and improvements in its hot press loading and unloading equipment so that its later model can properly be listed among the new developments of 1950. In addition to features that result in greater production efficiency, it is believed that elimination of the old chain drives for the elevators has made the equipment safer.

PANEL PATCHING

Several new shapes and sizes of veneer patches have appeared during the past year as plywood manufacturers have applied their ingenuity to the problem to producing much needed sound veneer from the available log supply. The American-Davis equipment for making patches and for patching panels was developed by The American Manufacturing Company and become widely accepted throughout the industry during 1950. The essential feature of this patch is that the defect is removed with a router and replaced with an oval patch which is accurately made to fit the hole left by the router.

It takes much less time to put in the American-Davis patch because the labor with the chisel is eliminated. The patch is better because the glue surface made by the router is smooth and can be brought into intimate contact with the patch in contrast to the irregular, slivered, surfaces made by the chisels.

Another relatively new development in patching is the use of electronic equipment to cure the glue. This equipment is in use in several mills. It is reported that the time

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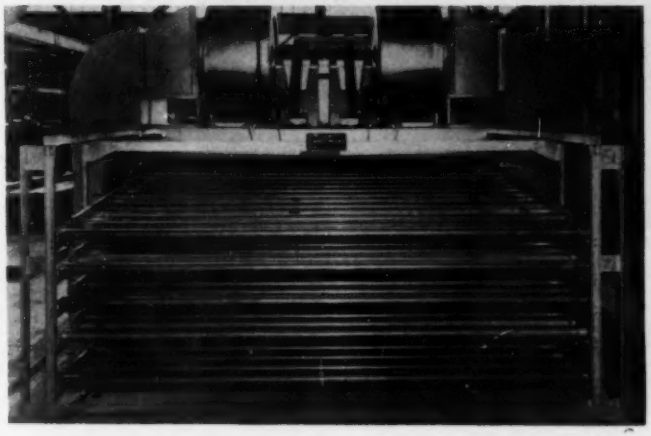

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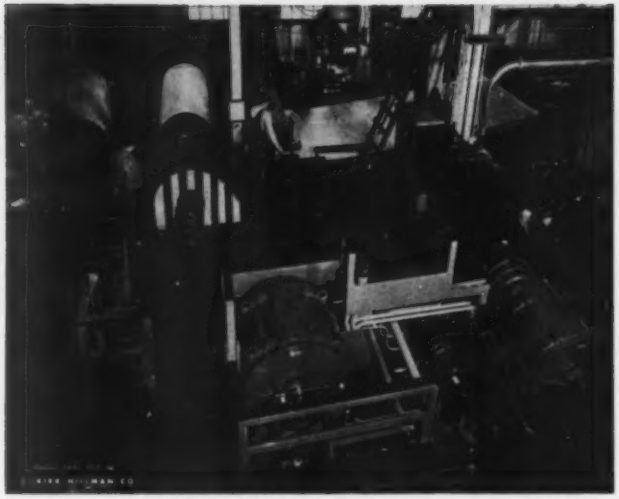


Large-sized lathe in Robinson Plywood & Timber Corp.'s plant, Everett, Wash., being driven at constant output speed by a C. Kirk Hillman Co., all Electric Veneer Lathe Drive. The variable-speed motor is in center foreground. Power is provided by motor-generator set in right foreground.

for curing a glue joint is reduced to within practical limits, and the result is a glue bond of high integrity.

SCISSORS LIFT

A significant contribution in the field of plywood handling equipment is the American portable hydraulic scissors lift. It is designed on the principal of a truck jack, and constitutes an inexpensive and efficient means of keeping the tops of plywood and veneer loads level with a working surface—as in patching operations. The fact that this lift requires no hole in the floor or other permanent installation features makes it especially attractive.

GENERAL

Anyone with intimate knowledge of the plywood industry will be able to point out additional new gadgets, methods and materials that are contributing in one or another important way to make plywood better, more efficiently, or that make possible more complete utilization of available logs.

We will resist the temptation to mention several developments that are not quite, but almost, in the actual production stage. Some of them will have a place on the list of new things for 1951. It will be enough to say in this connection that progress is continuing and that the present year is likely to disclose advances comparable to those of the year just past.

NEW SOUTH CAROLINA VENEER PLANT

The Atlantic Plywood Co. is now operating at Florence, S.C., in the former General Plywood Co. plant, producing poplar and sweet gum veneers. L. H. Fenters, president and manager, has had previous experience with a firm making plywood cut-to-size for the furniture trade.

Mr. Fenters reports an adequate timber supply. He says his company will attempt to produce only quality veneers, specializing in 98" lengths. Equipment in what he believes is one of the finest straight veneer plants in the South includes a 66" and 102" lathe and three double-section Moore veneer kilns, and thermostat-controlled vats for cooking the logs. All stock is dry-clipped, and, if the customer desires, jointed. Everything is mechanically handled, from the Atkins electric cut-off chain saw through the log chute and including overhead cranes in the lathe room.

The lathe foreman has thirty-five years experience behind him, and the dry foreman has had seventeen years experience.

Mr. Fenters said to THE LUMBERMAN that the farmer is now the key man in the supply picture in this area, as 95 per cent of the veneer bolts used at Atlantic Plywood Co. come from him. He believes a much closer relationship between the manufacturer and the timber owner has become necessary. "Our supply is going to depend largely

(Concluded on Page 164)

Log chute end of the Atlantic Plywood Co., Florence, S.C., with an E. C. Atkins electric chain saw shown in the foreground for cutting veneer blocks to length. Insert: L. H. Fenters, president and manager.

How to make a BIG industry BIGGER

During the past ten years, the market for plywood . . . both decorative and utility grades . . . has grown by leaps and bounds. New and exciting applications are constantly being found for this practical, versatile building material.

To keep abreast of the ever-increasing demand, industry production of plywood has climbed steadily year after year. 1950 production of Douglas Fir plywood alone is estimated at 2,300,000,000 sq. ft. (3/8" basis).

There are many reasons for this impressive achievement, including the many natural advantages of plywood and its adaptability to today's architecture, the active building market and certainly, the promotion activities both of the Douglas Fir Plywood Association and its individual members.

We are especially proud of the important part played by our continuous Weldwood national advertising and educational program. Booklets, instruction books, slide films and advertisements, such as those shown on this page, continue to educate home owners, architects and builders to the many advantages and uses of plywood.

This is the kind of program that will keep the plywood market strong, healthy and constantly growing.

UNITED STATES PLYWOOD CORPORATION

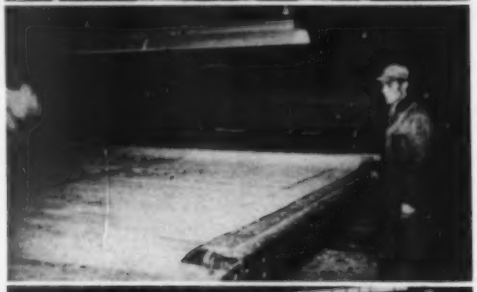
55 West 44th Street, New York 18, N. Y.

Offices in Principal Cities • Distributing Units in Chief Trading Areas • Dealers Everywhere

Crawford & Doherty barker. A Ladeen heavy-duty air cylinder (lower left) is used in place of hand-operated crank to keep rosser head in contact with peeler block.

Two Ederer bridge cranes handle peeler blocks from pond to lathe. Both bridge cranes have 32 ft. span.

Converting the peeler blocks into veneer by means of Coe 10 ft. lathe.



Coe Model 346 single-knife semi-automatic air clipper with timing device arranged for cutting at ½-inch multiples.

Feed end of the plant's two 18-section, 4-line Coe veneer dryers.

Left to right, F. A. Johnson, president of Multnomah Plywood Corp. and W. L. Bryson, secretary-treasurer.

WORKER OWNED PLYWOOD PLANT EXPANDS

Multnomah Plywood Corp., with its plant located on West bank of Willamette river in downtown Portland, Ore., was officially born late in 1949. At that time the original incorporators met and elected officers. The organization was formed around an "option to purchase agreement" for buying a new partially-built plywood plant of the Portland Plywood Corp. The option was exercised and the incompleted plant taken over during December '49; construction was immediately renewed under the new ownership, and production inaugurated three months after the purchase.

Maximum production in this one-unit cold-press plant was reached last August, making 3½ million square feet of plywood (⅜" basis) that month. Later in the year work began on installation of additional equipment to convert the plant to two-unit operation. The additional production line was completed about the first of current year, reportedly raising monthly plywood capacity to over 5 million square feet.

This is a worker-owned organization. About half of the 250 employes are stockholders. Officers of Multnomah Plywood Corp. are as follows: President, F. A. Johnson, for several years in Washington (state) plywood industry, the last 6 years of which were at Puget Sound Plywood, Inc., Tacoma; Vice President, Clyde A. Smith, formerly of Buf-

F. J. Bickel, foreman; John A. McMillan, plant superintendent.

felen Manufacturing Co., Tacoma; and Secretary-Treasurer, W. L. Bryson, previously affiliated with Multnomah Lumber & Box, Portland. John A. McMillan, one of the original incorporators, is superintendent of the plant.

To date, according to Mr. Johnson, the company's supply of logs has been obtained in open market. He says the organization owns standing timber, but logs will for the present, and immediate future, continue to be obtained in the market.

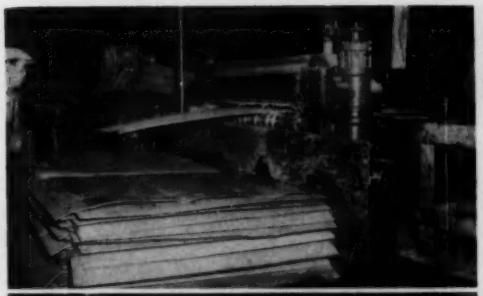
Discussing future plans of the corporation, President Johnson told The LUMBERMAN that the immediate program calls for installing a 66" Sumner chipper to convert much of the plant's waste veneer into chips suitable as raw product for pulp and paper mills.

In January construction started on a 450 h.p. steam plant, using a 2-drum Springfield boiler at the major unit. P. S. Lord Mechanical Contractors, Inc., have the construction contract. Pending completion of the steam plant, both steam and electricity will be obtained from the adjacent Pacific Power & Light Co. power plant—which has been source of power for the plywood plant since it first went into production.

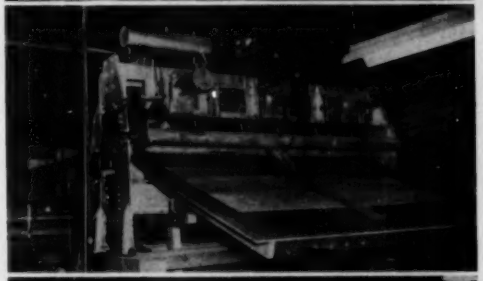
As result of recently installing additional processing equipment, and thus enlarging steam requirements, the directorate decided the organization should provide for generation of its own steam supply, because of economics and production security.

Following through the production processes, starting with logs floating in the plant's Willamette river pond —Logs are converted to appropriate length peeler blocks by an electrically powered chain saw. Resultant water-borne sawdust is pumped to a squirrel-cage where the wood is separated from the water and subsequently utilized as fuel.

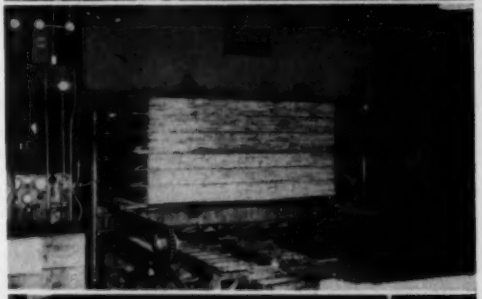
Peeler blocks are taken from the water into the green end of the plant



One of two Fluckinger steel-roll glue spreaders applying Casco Bordens cold-setting glue to core stock.

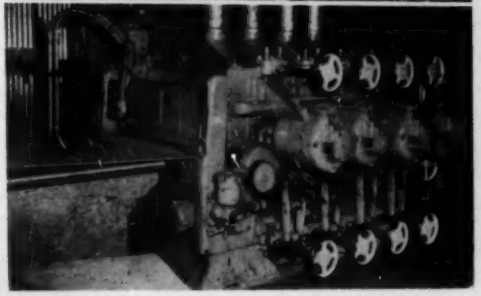


View of Elliott-Bay edge gluer, installed in December, making "big ones out of little ones." The unit's clipper is shown in the foreground.

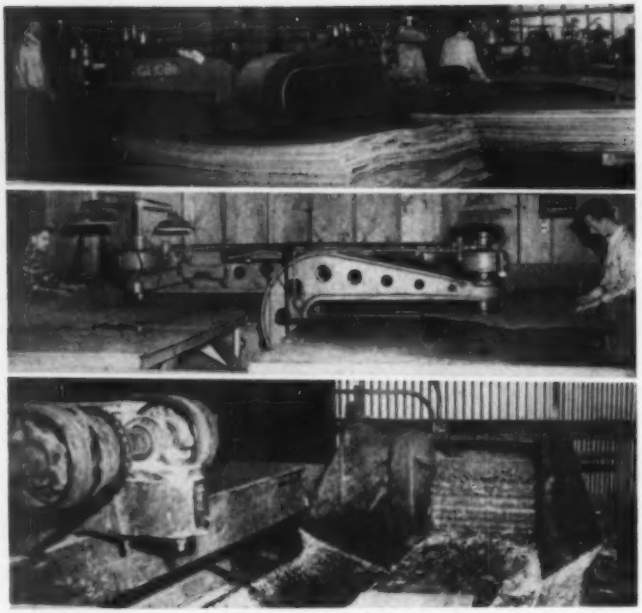


One of the two Ederer cold presses.

Feeding ⅜" panels, four at a time, through American Manufacturing Co.'s skinner. An American Manufacturing Co. lift, at left, keeps pile of panels at convenient height for operators.



Finishing both veneer faces of plywood panels passing through Yates-American 8-drum sander from which the resultant dust is removed via the plant's American Sheet Metal Works blower system.



Patching section, including 2 Globe and 2 Globe-type hot patchers and Globe defect cutter.

Battery of two Skoog plug patchers upgrading lower grade veneers.

Peninsula veneer hog at discharge end of green-chain section converting waste veneer into hog fuel. This is one of three Peninsula hogs in the plant.

by a cab-operated 10-ton Ederer bridge crane, which places the blocks in the Crawford & Doherty barker and subsequently carries the debarked blocks to the storage area between barker and lathe. Another bridge crane, a 6-ton floor-operated Ederer, takes the blocks from storage and places them in the lathe.

A Ledeen air cylinder is used on the barker for maintaining barker-head contact with the peeler block, thus eliminating the usual hand-crank feed device. The barker operator reports more effective bark removal has resulted since the Ledeen cylinder was installed.

The peeler blocks are converted to veneer by a 10′ Coe lathe powered by a steam engine. Six 100′ Coe veneer trays receive veneer from the lathe. Two Coe veneer clippers, one for each three trays, convert the veneer into appropriate size straight-edge sheets. One clipper is Coe's new 346, a vertical-action unit, and the other is a revolving type, model 330.

Clipped veneer is rough graded (sap and heart) on the green chain and removed and piled via eight American Manufacturing Co. automatic veneer pullers—"Iron Swedes." Two Coe 18-section 4-line dryers, 96′ in length, convert the green veneer to dry stock.

Considerable defect elimination facilities are operated here with view to improving grade and increasing veneer utilization. A Miller edge gluer, manufactured by Elliott Bay Plywood Machinery Co., converts narrow veneers to large solid sheets. This machine, installed during last December, "saves a lot of veneer stock by trimming to smooth edges for making big ones out of little ones," according to Mr. Johnson. Veneers are further upgraded at the patching section where defects are removed by a Globe defect cutter. Boat patches are applied by a battery of four Globe and Globe-type hot patchers.

Two Skoog plug patchers are used to up-grade low-quality veneer and for making solid core stock.

Two Fluckinger steel-roll glue spreaders apply Casco Borden's cold-setting glue, which has been mixed with Mississippi Lime Co. hydrated lime to make the glue most effective. Glue mixing is currently carried on by one Fluckinger mixer, but another such unit will be added this spring.

The glued, laid-up veneers are converted into plywood panels in two Ederer cold presses—an 8′ and a 10′. The smaller unit went into production the first of this year.

Finishing of rough panels includes edging-trimming to size with American Manufacturing Co. skinner and cut-off, with American Manufacturing elevator lifting panels to proper height for loading onto the skinner feed table and an automatic constant-height stacker receiving panels from the cut-off.

A 50″ Yates-American 8-drum sander finishes both sides of the panels. Another Yates-American, a 60″ machine, will be added this spring.

An American Sheet Metal Works blower system recovers wood fines and dust from the various plant operations.

Three Peninsula veneer hogs, strategically located in the plant, convert non-usable veneer and plywood trims into hog fuel. One hog is located just behind the lathe, another at discharge end of green chain, and the other along side the skinner saw.

All transportation of veneer and plywood in the plant—between machines, to and from storage, and carloading—is carried on by means of a fleet of four fork-lift trucks.

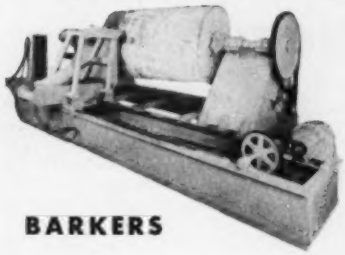
Other auxiliary equipment includes American-Davis router patchers, American Manufacturing Co. router patch cutters, Western Machine Works (Tacoma) shim cutter and boat-patch cutter.

RFC Loan for a New Oregon Hardboard Plant

A $2 million RFC loan has been approved for Oregon Fibre Products, Inc., according to announcement by an aide to U.S. Senator Morse, Republican of Oregon. This loan is said to finance approximately half the cost of a proposed hardboard and insulating board plant at Pilot Rock, Ore. Morse's office said the plant would utilize waste material from the Pilot Rock Lumber Co. and non-merchantable timber in the surrounding region.

Made Superintendent of Door Plant

John Cortz has been made general superintendent of the panel door, division of the M & M Woodworking Co., Portland, Ore. C. E. Woehlert has been made assistant superintendent.



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COMPLETE VENEER and PLYWOOD MACHINERY

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ALSO:

- Pond Saws
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- Core Lathes
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- Lathe Drives
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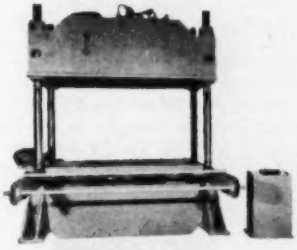
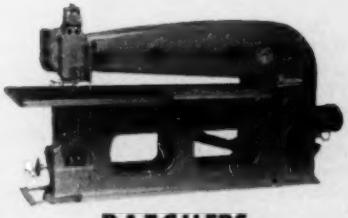


PRESSES

AND,

- Dryers
- Hot Presses
- Spreaders
- Mixers
- Dry Clippers
- Skinners
- Patching Equipment
- Core Saws

TRIMMERS



PATCHERS

PRODUCTION BROKE ALL RECORDS IN BRITISH COLUMBIA DURING 1950

Production of plywood and hardboard in British Columbia during the past year exceeded that of the previous year by a substantial amount, but a much larger increase is expected to materialize in 1951, with at least one new plant in full operation, another undergoing expansion and a third in prospect for early construction.

Overall production of the seven operating plants in 1950 was estimated at approximately 320 million square feet of 3/8 inches thickness, comparing with an estimated 312 million square feet of the same thickness in 1949, when unfavorable weather conditions caused some curtailment.

The past year, however, was marked by excellent operating conditions and in addition was stimulated by a steady demand in the domestic market and a resumption of purchasing on a fairly large scale by the United Kingdom, which had been a negligible factor since the termination of World War II.

Canadian Forest Products Pacific Veneer Division at New Westminster headed the individual producers with an output of more than 100 million square feet, but as some of this company's veneer is exported to its subsidiary in Bellingham it is rather difficult to arrive at a total representing the specific performance of the big mill. Hardboard continued to be an important product of this company, which planned to initiate production of a new hardboard line early in the new year, with special machinery already installed. Precise information is not yet available, but there are indications that Pacific Veneer's overall production will be materially increased during 1951 as a result of the changes now contemplated.

The two plywood plants of the H. R. MacMillan Export Co.—one near Vancouver and the other at Port Alberni—increased their output during the year from 116 million feet to 127 million feet, and Canadian Western Lumber Co.'s production was about the same as in the previous year, with Western Plywood contributing 30 million feet.

Western Plywood is expected to show a 100 percent increase this year as a result of the startup of production at its new Quesnel mill, which got under way the first of the year.

The plywood industry had its problems, but generally speaking, it was intensely active in all seasons. Costs of production have risen steadily, as shown by a comparison of hourly wages at one B.C. plywood plant. In 1937 the hourly wage averaged 45 cents. By 1946 this had increased 100 per cent to 90, and last year it was up to $1.31, representing an increase since 1937 of 191 percent!

Some anxiety was felt in the industry late in the year as a result of hints that the Canadian government planned to impose a tariff on primary resins. Representatives of the plywood manufacturers urged Ottawa to hold such action in abeyance inasmuch as it would seriously interfere with export sales. Expansion of the industry in recent years, it was claimed, was due in large measure to the introduction of synthetic resin adhesives and the mills were dependent on a continuing flow of this material at approximately the same cost.

When this proposal was being discussed at Ottawa spokesmen for the Plywood Manufacturers Association, which was first organized about one year ago, estimated the value of Douglas fir plywood in British Columbia in 1949 at roughly $25 million and the cost of the synthetic resins entering into the province at more than $1 million. It was argued that the West Coast industry was dependent on export trade and that during the five years prior to the war exports had accounted for about 65 percent of the total production. However, exports have been a less important factor in recent years and in 1950 represented only about 10 percent of the output.

BERNARDO PIZANO JR.,

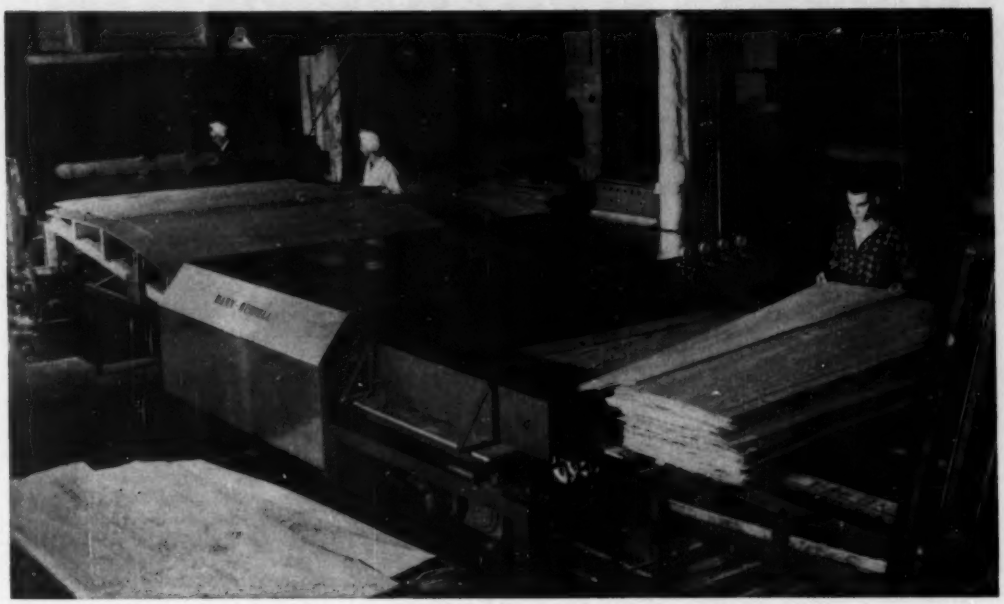
manager Pizano & Cia Ltd., Bogota, Colombia, veneer and plywood manufacturer who has been visiting United States and Canada and who bought machinery for a second plywood plant.

However, such a small export percentage was generally regarded as abnormal and this year, as a result of new business coming from the United Kingdom, it will be considerably increased. The orders were placed by the United Kingdom in December for the first time in two years. They were for approximately 15 million square feet, and it was understood that most of the plywood was earmarked for the use of the armed services. The deal was concluded following an exploratory visit to Canada by H. G. C. Townsend, senior assistant controller, plywood department, of Britain's Timber Control.

Britain would undoubtedly have made greater purchases of Canadian plywood in recent years had the dollar shortage not prevailed. The fact that the United Kingdom was ready to release the required funds —approximately $3 million—to close the deal was indicative of a changing attitude resulting from an improving economic situation in Britain.

Currently, British Columbia's plywood production represents about 65 percent of all Canada's in volume and 57 percent of its value, according to J. B. Armstrong, of the Plywood Manufacturers Association. The average annual wage in the industry in British Columbia is $2,200, compared with $1,880 in Quebec and $1,980 in Ontario. Production per man is about 111,000 feet, compared with the average of only about 26,000 square feet in the eastern hardwood plywood industry. The B.C. industry represents a capital investment of more than $7 million.

It is Mr. Armstrong's opinion that continued research by the industry will pay worth-while rewards, and he refers to such basic processes as veneer cutting, clipping, drying and glue spreading.



At Last! The Continuous *Flat-Plane* 100-Inch Electronic Veneer Edge-Gluer!

1. Speeds up to 30 lineal feet per minute. (Higher speeds on special order)
2. Perfect edge-register of joints. (First edge-gluer built on a flat plane!)
3. Superior to heated-drum type because:

   No surface heat is applied; no change of moisture content; no scorched surfaces; no stored heat.

   Gluing takes place while web is in flat plane; not curved . . . not stressed, internally!

   Locked-in stresses between panels are eliminated.

   Glue-line is solid-set throughout . . . evenly cured on both faces of the stock.

   Glue squeeze-out is solid-set; sheets may be used immediately, in production.

YEARS of development and experimental work—in the Mann-Russell laboratories and at the University of Washington Forestry School—culminate in this, the first successful continuous flat-plane veneer edge-gluer. It combines a new mechanical V-belt drive, electronic high-frequency heat, and Mann-Russell "Parallel Bonding"* to produce an endless strip of random-width edge-glued veneer. Check the features!

Equipment available in any width for any wood thickness from 1/16th inch to 8 quarter. To speed your production through modern high-frequency gluing, write, wire or contact the pioneers in electronic applications for the wood-working field:

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* Licensed under Parallel Bonding process patents No. 2,434,573 and 2,457,498. Patents pending on flat-plane veneer edge-gluer.

CALIFORNIA'S NEWEST PLYWOOD PLANT

Newest of California's plywood mills is that of Mutual Plywood Corp. at Fairhaven, right across Humboldt Bay from Eureka, and as might be expected this newest of mills incorporates some interesting features.

For example there is a log slip, similar to that of a sawmill. Logs are bucked on the mill deck, as in most large sawmills, and three advantages accrue: 95% of the sawdust is kept out of the bay; pondsmen and deck saw operators don't have to fight the tide, as would be the case if the logs were bucked in the bay; and finally, a much better bucking job is done on the firm mill deck than can be done in the water.

The bull chain is powered with a steam engine, and bucking is done with an electric powered Woodsman drag saw.

After the logs are bucked, peelers are picked up by an overhead traveling Ederer crane, of which there are two in the plant, and carried to a 10′ Nicholson barker, manufactured by the Nicholson Machine Works, Seattle. When barked the peelers are picked up by the same Ederer crane, and moved to the 10′ Coe lathe. This Coe lathe is powered with an Ajax steam engine. The veneer is clipped on two Elliott Bay 10′ veneer clippers, and goes to two 18-section Coe veneer dryers, via a Coe tray system.

At the time The LUMBERMAN field editor visited the plant there was only one press in operation—a Globe 5x10. However, a Francis 4x8 press was to be installed shortly. A Lake Erie hot press will also be added shortly. Globe patching equipment is used throughout the plant, and the company also uses a Merritt-Solem jointer, a Laucks glue spreader, and a Dennis taper.

Panels are sanded on two Yates-American sanding machines.

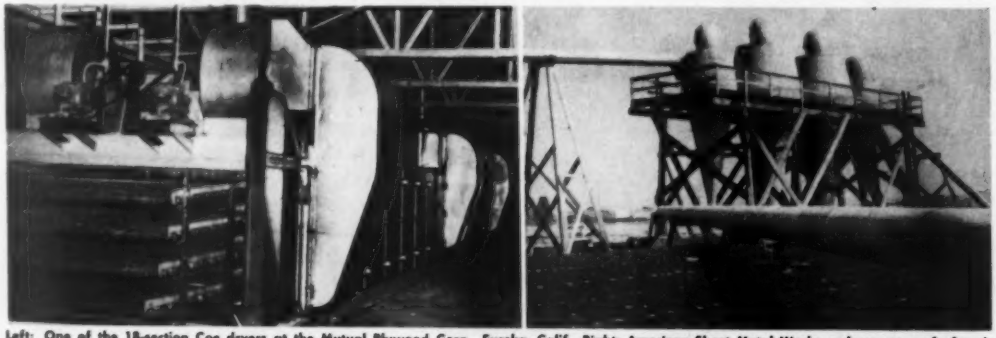
The freight elevator for the glue loft, and the scissor lift elevator on the glue spreaders were provided by the American Manufacturing Co., Tacoma, Wash.

Panels and veneer are handled around the plant on three jitneys—two of them Hysters.

The entire dust collecting system was built and installed by the American Sheet Metal Works, Portland, Ore.

The blower serving the patch department is a No. 60 American Sheet Metal Works planing mill exhauster and it discharges into one of the four dust collectors which are centrally located on the roof. The blower system serving the cutup or saw department is also served by a No. 60 American blower, and it also discharges into the same size dust collector serving the patch department. In the sanding department, a No. 70 American planing mill exhauster serves each one of the Yates American sanders and a belt sander. These blowers discharge into the two larger, specially designed, long cone dust collectors on the roof. The fifth system, which is referred to as the relay system, sets under the roof directly below the four dust collectors, and its intake main is connected to the four cyclone outlets.

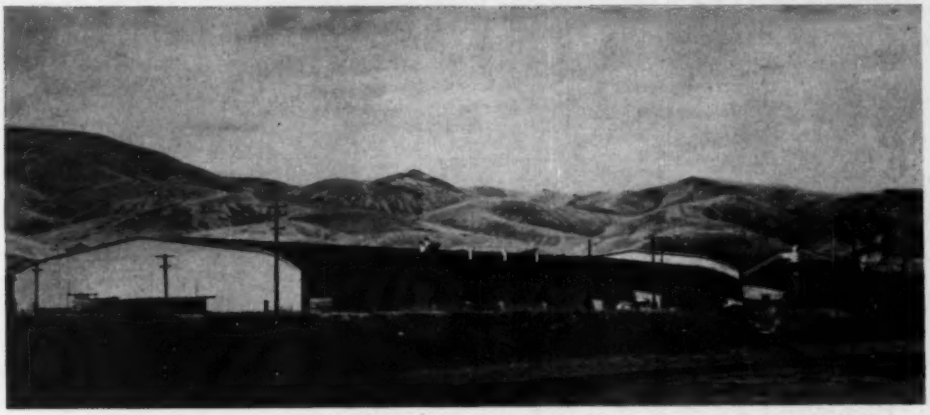
Mutual generates its own power in a modern steam turbine plant. Plywood refuse goes through a 42″ Peninsula veneer hog, and other



Left: One of the 18-section Coe dryers at the Mutual Plywood Corp., Eureka, Calif. Right: American Sheet Metal Works cyclones on roof of main building.

Left: Showing how logs are bucked into peeler block length on deck of plant, with a Woodsman electric drag saw. Right: Sumner Iron Works No. 45 hog.

POTLATCH FORESTS, Inc. PINE VENEER DIVISION

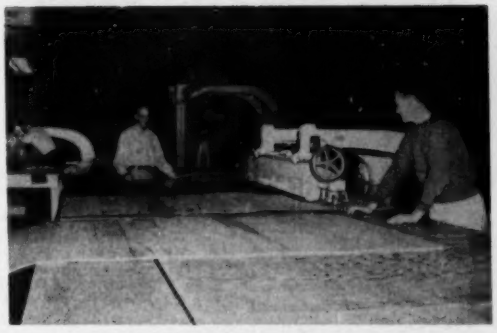


OVERALL EXTERIOR VIEW OF THE NEW POTLATCH FORESTS, INC., PINE VENEER PLANT AT LEWISTON, IDAHO, ONE OF THE LARGEST SOURCES OF SOFTWOOD VENEER IN THE COUNTRY.

Idaho White Pine and Ponderosa Pine Veneer

NEWEST UNIT in the closely integrated scheme of wood utilization of Potlatch Forests, Inc., is our plant at Lewiston, Idaho. Equipped with a rotary lathe and a 16-foot slicer, the plant produces both rotary cut and sliced clear Idaho white pine and ponderosa pine and knotty Idaho white pine sliced veneer. It is strictly a pine veneer plant with emphasis on quality and grade rather than quantity production. Nevertheless, it has quickly grown into one of the largest sources of softwood veneer in this country today.

Operations have been planned to utilize the most modern equipment to fullest advantage. Plant lay-out plus new and unusual installation innovations beginning with the handling of the logs in the pond and on through to final shipment of finished product have made this Potlatch unit the talk of the industry.



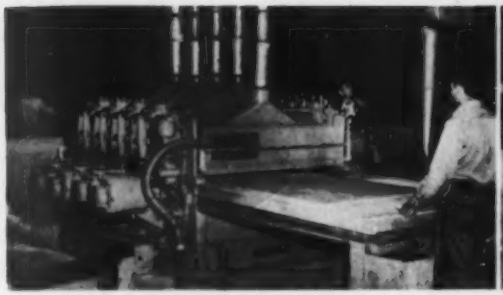
Completely equipped with the most modern veneer equipment, the Potlatch plant is engineered for fast, accurate production.

Typical of up-to-the-minute equipment in our plant are these two dryers, with special temperature controls that operate on special schedules developed for each species, thickness and segregation.

WEYERHAEUSER TIMBER CO. FOREST PRODUCTS

POTLATCH FORESTS, Inc.

Lewiston, Idaho



Left: Yates-American sander—note American Sheet Metal Works dust collecting system. Right: Peninsula Iron Works veneer hog.

Log barker manufactured by Nicholson Manufacturing Co., in Mutual Plywood Corp.'s plant, Eureka, Calif.

refuse goes through a Sumner No. 45 hog.

Dust is blown to the fuel house via American Sheet Metal Works blower, and is collected by a cyclone on the roof of the fuel house, and by a number of cyclones on the roof of the main plant. Hogged material is carried to the fuel house by belt conveyor.

A 900 hp. Puget Sound boiler provides steam for a 1,000 kw. General Electric turbine generator, and there is also a 200 kw. General Electric generator powered with General Motors diesel, for stand-by purposes.

The company has its own fire protection system, backed up with the water from a million-gallon lake.

The buildings of Mutual Plywood encompass five acres under one roof, with 169,000 sq. ft. of floor space.

It was estimated that about 135,000 sq. ft. of plywood on a ⅜" basis were being manufactured daily. U. S. Plywood Corp. has contracted for the output of the Mutual Plywood Company.

President of Mutual is August E. Holm, and A. H. Westman is vice-president. E. W. Strausser is secretary-treasurer. In October, 1950, Elmer Hall was appointed general manager of the corporation, to succeed C. L. Rank, who had been executive vice-president and general manager. Rank, an attorney, returned to the San Francisco Bay area to resume the practice of law.

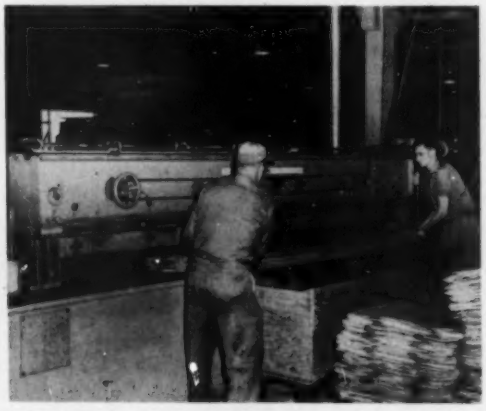
Hall came to Eureka several years ago to supervise the building of the Eureka Plywood Co., and subsequently served as plant manager for that firm.

In May, 1950, he was hired as superintendent of Mutual.

At the present time some 225 men are employed at the plant, but it was anticipated that this would be expanded to 250 in the near future.

The company recently purchased 350 million feet of timber in the Redwood Creek area, and this timber will be logged and hauled to the mill by Joe Walker & Sons, Eureka loggers and log haulers.

Right: Merritt-Solem veneer jointer.



Left: E. W. Strausser, Secretary-Treasurer, and right: Elmer Hall, general manager.

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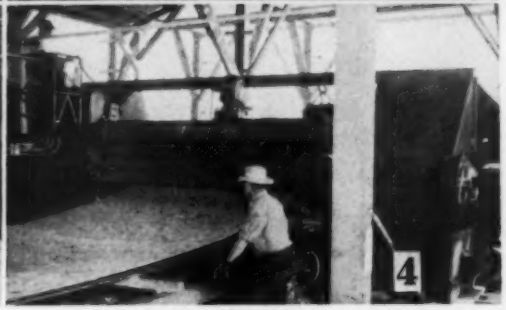

1. Barker at the Hedberg Lumber Co., Fortuna, Calif., veneer plant. It is 96 x 120", and was designed by E. V. Prentice Machine Co., and built by Gunderson Engineering Co., Portland. 2. Manager Gunnar Hedberg stands in front of his new Jackson veneer lathe. 3. The Victor clipper, built by E. V. Prentice Mach. Co., Portland. The machine is fitted with an electric eye device which makes its cutting most accurate. It has Valvair control valves. 4. Douglas fir veneer coming off the 110" by 84" Jackson veneer lathe. The machine is powered with a 200 hp electric motor, equipped with a specially built variable speed drive, which gives the operator any speed he wants, forward or reverse.

STRAIGHT FIR VENEER PLANT

Interesting new equipment and a clean-cut straight line production characterize the Fortuna, Calif., plant of the Hedberg Lumber Co., owned and operated by Gunnar Hedberg and his brother, Elmer.

It's just tradition that the company is named Hedberg Lumber Co., for the company doesn't manufacture lumber at all, but makes fir veneer, about 300M sq.ft. of it daily which it ships green to various manufacturers who make it into plywood.

The Hedberg brothers came to Fortuna in 1946 from Oregon where they had been in the sawmill business, and they built a neat little sawmill in Fortuna. However, this mill burned down a year or so ago, and has been replaced, not far from the original mill site, with the veneer plant.

Peeler logs are purchased on the open market, and delivered to the mill, dumped into the pond. Logs are cut by an electric deck saw, and are brought to the barker by an electric overhead crane.

The barker is a 96 by 120" machine, designed by E. V. Prentice Machine Co., Portland, Ore., and built by Gunderson Bros. Engineering Co., Portland.

The lathe was manufactured by *Jackson Industries, Inc., Birmingham, Ala.*, and sold by *E. V. Prentice Co.* It is 110" by 84", and has a 200 hp. variable speed drive, built by Walter Smith, Electric Motor Shop, Eureka. It has a variable speed direct current generator voltage control. The controller is similar to the one Smith uses on his electric sawmill carriage feed drives. One of the advantages of the drive is that the operator can obtain any speed he desires—forward or reverse.

The Victor clipper, made in Portland by E. V. Prentice Machine Co., has an electric eye device for measuring, which makes its cutting most accurate. It is equipped with Valvair control valves.

Cores, waste veneer, and veneer are handled around the plant with a Hyster lift truck.

Associated Plywood Buys Large Timber Tract

Associated Plywood Mills, Inc., Eugene, recently purchased from the Lloyd Corporation, Ltd., of Los Angeles, approximately 540,000,000 feet of high grade timber which is located in the Rogue River watershed near Gold Beach, Oregon. Leonard Nystrom, President of Associated Plywood Mills, Inc., stated that this timber purchase together with other large timber reserves now owned by the company will insure continued operations of their sawmills and plywood plants, thereby giving employment to over 1,000 employees for many years to come.

The plywood company plans to construct a sawmill and green veneer plant near Gold Beach as soon as public power is available in order to process this tract of timber, which is one of the largest privately held forest regions in Oregon. It is believed that construction of these plants will be completed during the latter part of 1952.

The green veneer produced at the Gold Beach mill will be further processed into plywood at Associated's two plywood plants, located at Eugene and Willamina, Oregon.

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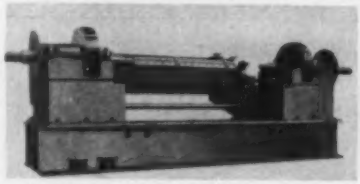


Bamford-Premier Veneer Lathe (either hydraulic or electric chucking)

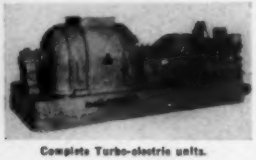
Variable speed electric veneer lathe and carriage drive.

Bamford-Premier Barker

Pacific Resaw (right)—54" tilt feed roll; 4-speed electric feed.

Pacific Edger—4" to 12"

Sidney Engine Lathes



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● One of the largest blocks ever peeled in the Douglas fir plywood industry is shown here mounted on a 130 x 110-inch Coe lathe in the Puget Sound Plywood plant at Tacoma, Washington. Original block was almost 11 feet in diameter...and contained 6200 BM feet.

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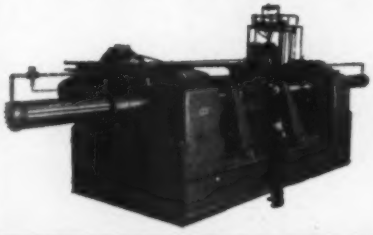

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CANADA'S HARDWOOD PRODUCTION IS EXPANDING

Canada's hardboard production in 1950 was unofficially estimated at about 60,000,000 square feet of quarter inch thickness. Production will probably be substantially increased in 1951 as a result of new production facilities going into operation.

The only actual producer of hardboard, as such, in Canada has been the Pacific Veneer Division of Canadian Forest Products, Ltd., at New Westminster, B.C.

However, Masonite Co. of Canada, at Gatineau, Que., has been making masonite at its new plant near Ottawa for several years. This plant is operated as a unit of the big integrated wood products operation of Canadian International Paper Co., other adjacent units producing plywood, lumber, fibreboard, pulp and paper and industrial alcohol.

Average production at the Pacific Veneer plant in British Columbia has been 80,000 square feet a day; at the Masonite plant about 125,000 square feet.

The new development in the Canadian industry is the hardboard plant of Abitibi Power & Paper Co., which has completed a hardboard factory to operate in connection with its pulp and corrugating board mill at Sturgeon Falls in Ontario, near the main line of the Canadian Pacific Railway, at North Bay. This plant was to go into operation in January, 1951.

The Masonite hardboard factory at Gatineau uses 43,000 cords of wood annually, mostly jack pine.

The Pacific Veneer plant was installed a couple of years ago as a means of utilizing wood not used in the plywood factory, which is British Columbia's largest single plywood-producing unit.

Plywood Plant Adds to Drying Facilities

Campbell-McLean, Inc., plywood manufacturing firm at Eugene, Oregon, headed by C. F. Campbell, president, and Mac M. McLean, vice-president and manager, has been in production during the past year and a half. The organization operates a veneer peeling plant at Gold Beach, in the southwestern corner of Oregon, the output from which is trucked to the drying-gluing plant at Eugene for conversion into sheathing and finish type plywoods.

Present plywood production is at the rate of two million square feet per month (⅜" basis), but completion of current extensive plant expansion early this spring will, according to Mr. McLean, raise output to between 4 and 5 million feet per month. This program will permit of 2-line plywood production. Already a second press, glue spreader and dry clipper have been added. Increased drying facilities, in form of two dry kilns, are now being installed. Veneer drying to date has been carried on with a Proctor dryer, for core veneer, and a 2-tunnel kiln with capacity for 32,000 square feet of stickered veneer every four hours. Reichhold Chemicals, Inc., cold-press "plyacier" glue is used here for bonding veneers into plywood.

A former silica plant, government built as war-time emergency, houses the plywood manufacturing section of the Campbell-McLean operations. The original power plant provides steam for the dryer and kilns. Transport and handling equipment in the manufacture of piywood consists of 3 Hyster lift trucks—one model 75 and two 50s.

The green veneer plant at Gold Beach has been producing about one million square feet of veneer per month (⅜" basis), but output will be considerably increased this spring when a new Bamford hydraulic 84" lathe replaces the present 50" unit.

HOWARD B. GARRISON has been appointed Manager of the West Coast and Wood Products Division of the Evans Products Company. Mr. Garrison succeeds the late Vern Johnson. He has been Assistant Secretary-Treasurer of the company since 1944.

The larger unit will be diesel-electric powered, using 220 h.p. Buda engine to drive a direct-current generator which in turn powers a direct current motor of 450 r.p.m., 125 h.p. The present 4-tray veneer storage system between lathe and Merritt clipper is to be enlarged to 7 trays, the Merritt clipper to handle the top three and an Elliott Bay clipper on the bottom four.

A 5-acre log pond and barker will also be added as a part of the current project.

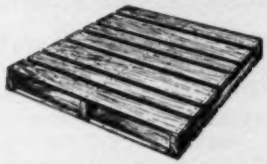
The company buys green veneer from other peeling plants to supplement the supply obtained from its own veneer plant.

Clayton Thomas is superintendent of the Eugene plywood manufacturing operations and Paulus McKee is superintendent of the green end at Gold Beach.

Expanding Use of Pallets in Industry

The humble pallet made of plywood or wood has had a great growth in use throughout American industry. With the growing use of all types of lift trucks and straddle trucks, the pallet serves the useful purpose of having loads all ready to go.

The Evans Products Co. of Coos



Bay, Ore., have specialized in the manufacture of pallet for the past 26 years. In fact, they have done extensive research on "loading engineering." Their main thought along this line is to develop devices to speed material handling and shipping while reducing costs, damage and waste.

Pallets are used in all types of industrial plants, warehouses, packing plants and brick yards to save money, floor space, time and labor. Naturally, pallets come in different styles such as single faced, double faced, wing type and the hand transporter.

In addition to pallets, the Evans Products Co., manufactures Douglas Fir plywood, moulded plywood, Port Orford cedar battery separators and blind slats. They have a lumber manufacturing division for core stock, dimension stock, railroad ties, etc. Thirty-one dry kilns are used to provide scientifically prepared lumber.

Both producers and users of plywood forms for concrete work find that Sherwin-Williams KEMWOOD FORMSAVER makes possible new savings in time and money.

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Yours very truly,

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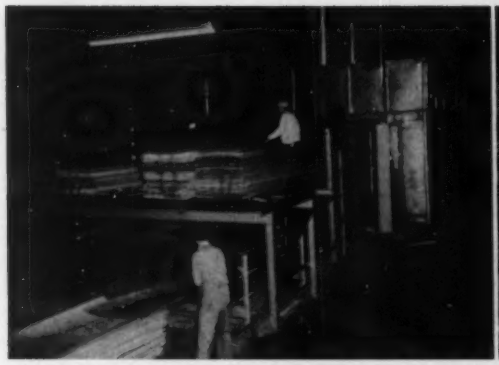
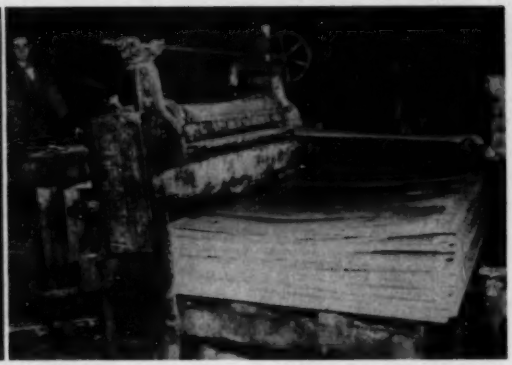


The 12-section, 6-tray Moore dryer dries green veneer to 4 to 12% moisture content by cross circulation. Unit is loaded from two decks, three trays fed from each deck.



Applying American-Marietta cold press glue with spreader and laying up the veneer ready for conversion into plywood in the press.

PLYWOOD SHEATHING

NEW OREGON COMPANY PRODUCES THIS ITEM AS ITS PRIMARY PRODUCT

Plywood sheathing is not a new product to the Douglas fir region of the Pacific Northwest, but has for years been made in conjunction with upper grades of plywood. Just recently a new organization, the Valley Plywood Co., Junction City, Ore., built a plant and started production of sheathing as the primary product. The firm buys its rotary cut veneer from green veneer plants—Western Veneer Co. at Sweet Home, and Cottage Grove Plywood Co. at Culp Creek.

This arrangement is felt to have several advantages. It gives the green veneer plant increased opportunities of grading and sorting its veneer to facilitate highest returns. Top grades will continue to be used for finish plywood, but the market is increased for the sound low-grade veneer which in many cases has in the past been quite a problem to the sales department and at times was otherwise disposed of just to keep it moving rather than stacking up. The veneer plants are not only directly benefitted by this increased demand for their lower grade product, but this added utilization extends the supply of suitable peeler timber. The new Valley Plywood plant utilizes all the lower grade veneer of Western Veneer Co. that will meet requirements for sheathing. Western Veneer's Sweet Home plant utilizes extensive amounts of salvage timber obtained on areas previously logged of peeler or saw logs. Snags obtained from the logged-over timber lands are processed into peeled veneer for both finishr sheathing grade plywood.

Valley Plywood Co., a firm of which Harold R. Jones is general manager and Al Overgard is sales manager, started up production last October. By the end of the year it was producing sheathing in excess of 4 million square feet per month (⅜" basis) and in January monthly production had increased to 5 million feet.

Key operating personnel of the plant includes George W. Karlson, plant manager; Carl Hevlin, superintendent; and W. T. Metts, master mechanic.

At present plant production runs strongly to ½" and ⅝" also making ⅜", 5/16" and some other thicknesses. Prime uses for the panels are sub-floors, boxes and crates for government needs, sub-walls, and roof sheathing.

Excepting barking, peeling, and chipping operations characteristic of conventional Douglas fir plywood plants, the Valley Plywood Co. sheathing plant is quite similar to other plywood plants of the region. However, a plastic-filling section assumes considerable importance in the sheathing manufacture. There is neither hot-patch section or sanding section.

Veneer Drying

Veneer drying, first processing step at the Valley plant, is carried on by running the thin, green sheets through a new Moore Dry Kiln Co. 12-section, 6-tray, cross-circulation veneer dryer. This Moore unit has two cooling sections and two loading tables, with 3 trays charged from each table. Stock is dried to about 12% moisture content, requiring from 4 minutes minimum drying time to about 20 minutes maximum, depending on thickness and the green moisture content. Changes in rate of travel through the dryer are

(Concluded on Page 127)

Valley Plywood Co., key plant personnel—Left to right, George W. Karlson, plant manager; Carl Hevlin, superintendent; Ralph Russel, day shift foreman; W. T. Metts, master mechanic.

MEET
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VENEER
DEMANDS
WITH

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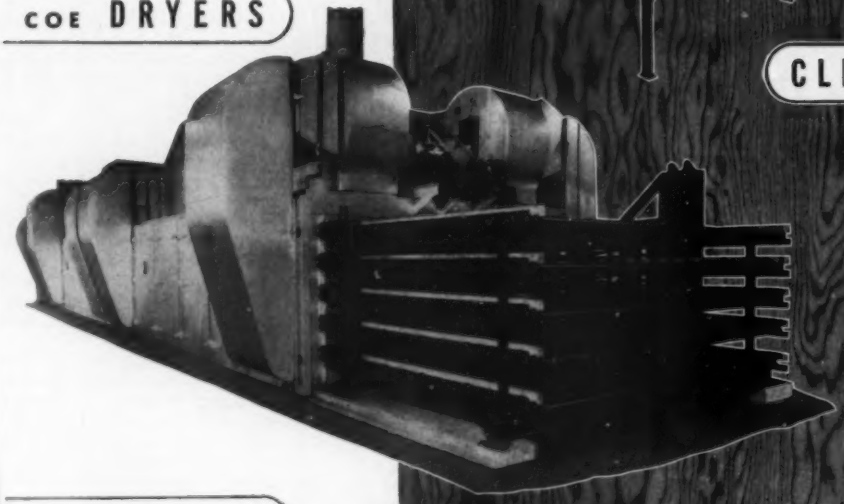
COE DRYERS

CLIPPERS



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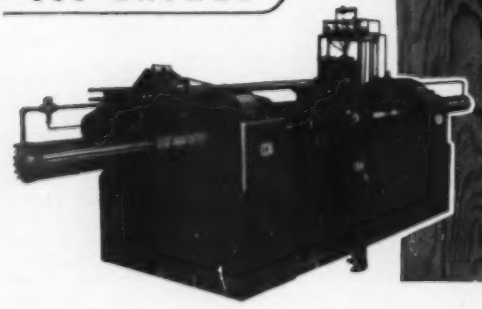

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THE MANUFACTURING OF PINE VENEER

By

PHILIP REINMUTH

Superintendent, Veneer plant, Potlatch Forests, Inc., Lewiston, Idaho

Before proceeding to a detailed description of the various steps in the manufacturing of veneers it may be well to establish a definition of the often misunderstood word "veneer." The definition that seems to serve best is that "veneer is timber in the form of a thin layer of uniform thickness produced by slicing, sawing, or rotary cutting." This paper will have to do only with the sliced and rotary cut veneer.

In order to produce smooth, tightly cut veneer a great deal of care must necessarily be given to the selection of the log in the woods. Pine logs are selected in many cases even before the tree has been felled. The tree is marked with red or white paint and after felling it is inspected closely for defects not permissible in a peeler block. A No. 1 pine peeler log should have 50 percent face stock, a No. 2 pine peeler should have 33 percent face stock, and a No. 3 pine peeler is considered a core log. Logs should be selected with knots that do not exceed 2½ inches in diameter. Such defects as ring rot, shake, spiral grain, splits, checks, and dead wood are not permissible in peeler type logs. Peelers which have a marked difference in density between one side and the other will not give a high yield of veneer. The problem of using freshly-cut logs varies a great deal with the size of the operation and the distance the logs have to be transported to the veneer plant. It is not advisable to allow peeler blocks to float in the pond for a prolonged period before being used because this practice has a tendency to cause unequal moisture content between the part of the log that is submerged and the part that is exposed to the atmosphere. Where the veneer plant is a part of a sawmill operation care must be given to the proper cutting of the log to length, so that in the event that a log contains one or two typical peeler blocks, the remainder will be long enough to be sent to the sawmill and cut into the conventional lengths desired in lumber.

The method of thoroughly washing a log with water under pressure and then raising it out of the water for inspection before cutting into peeler-block lengths, is advantageous from several angles. It enables the selector to inspect the log from all sides, causes much of the loose bark and dirt to be removed before going to the barker, and results in an all around better opportunity to eliminate undesirable blocks.

After the log has been carefully selected it is important that a good job of barking is done in order to save the valuable sapwood and to clean the log thoroughly so as to save excessive wear and tear on lathe knives. The newly developed compression-head barker works very satisfactorily on pine logs, because it consists of a smooth cylindrical roller which tends to push the bark off rather than chew it off as many other barkers do.

From the barker the block is transferred to the lathe where it is scaled and the actual making of veneer begins. Some operations do the scaling at two or three different places. The practice of scaling the log in the pond, through the chain saw and then again at the lathe is followed in many plants. Others feel that scaling at the lathe only is sufficient.

The lathe operation is a very important part of veneer preparation. The operator should be a man who has a knack with machinery. He should be patient, alert, dependable, and one who takes great pride in his work. The cutting of veneer has been and is still considered more of an art than an exact science. There are certain principles which must be adhered to if good, smooth-quality veneer is to be produced. A veneer lathe must be provided with a means of rotating the log against a knife, a means of exerting pressure on the log as it rotates in a line parallel to the knife, and a means of advancing the knife into the log at a predetermined rate. The knife acts as a wedge and the wood in the form of a sheet passing over the knife would be split rather than cut from the log if pressure were not applied to the log to compress the fibres at the knife edge. From the foregoing statement certain rules can be stated as follows:

Rule No. 1—Use the longest knife bevel which will give a satisfactory cutting life between grinds when cutting the hardest grains normally encountered in the wood being cut. It also follows that the keener the knife edge, the smoother will be the cut surfaces.

Rule No. 2—Set the knife edge level with the center line of the lathe spindles so that every point along the knife edge lies on the same center line. Every point along the edge of the knife must lie in a common straight line which, itself, must lie in a horizontal plane passing through the center of rotation of the block.

Rule No. 3—The line of contact of the pressure plate or roller with the block must be parallel in all planes with the line of the knife edge.

Rule No. 4—When using a roller pressure bar, the center of the roller must be in a plane which passes through the knife edge and forms a 12 degree angle with a plane which is perpendicular to the knife bevel. The average normal position of the knife bevel is approximately vertical. The normal angle of the knife bevel is approximately 20 degrees.

Rule No. 5—The minimum thickness of veneer which can be cut with a given diameter roller will actually depend upon the optimum pitch angle and the optimum angle of knife bevel for a given set of conditions. Specifically the minimum thickness which can be cut with a ¾-inch diameter roller is 1/10 inch; with a ⅝-inch diameter is 1/12 inch; with a 9/16-inch diameter is 1/24 inch.

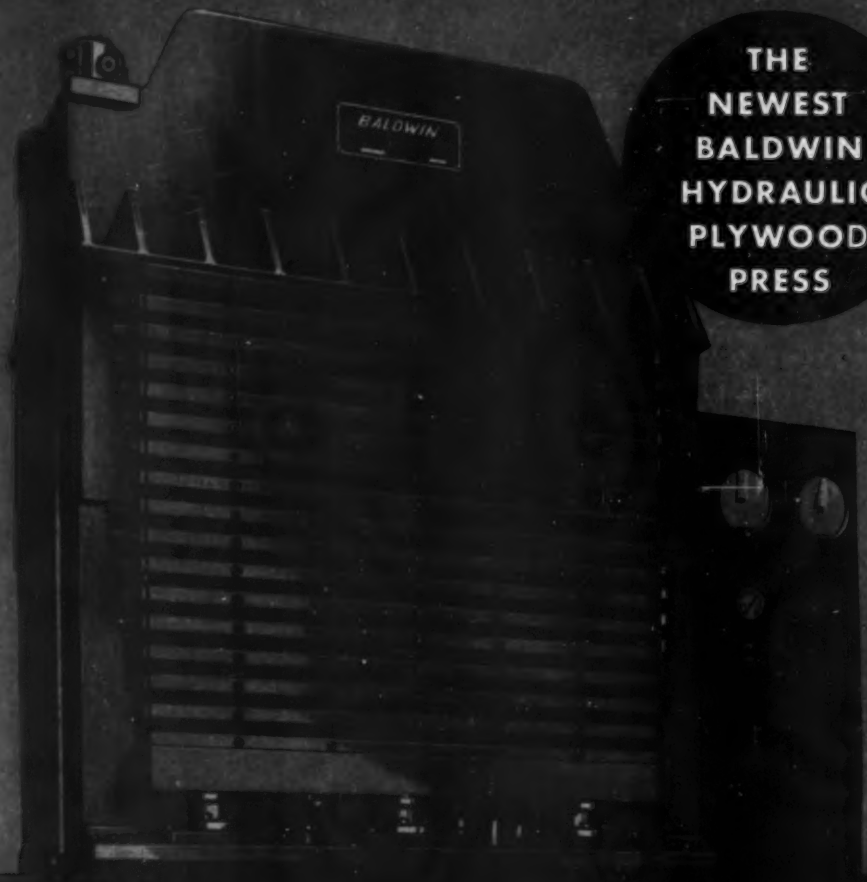
Rule No. 6—The optimum pressure to be applied is a minimum pressure which will hold the knife in the cut and produce given veneer whose thickness is equal to the actual feed per revolution.
is that which provides minimum bearing

Rule No. 7—The optimum pitch angle is that which provides minimum bearing of the knife against the block and, at the same time, avoids all tendency for the knife to chatter or cut "washboard." If the knife leads into the block excessively, a scraping rather than a cutting action results which causes chatter and rough cut veneer. If the knife has excessive "heel" or "bearing," excessive pressure is built up between the block and the knife, resulting in thick and thin veneer, as the excess pressure builds up removes greater than normal thickness. to a point where the knife bends and The use of excess "heel" and/or excess pressure requires excess torque to rotate the block resulting in split or bored out blocks.

Cutting Techniques

In addition to the preceding set of rules there are also certain cutting techniques that must be religiously followed in the production of well-cut veneer.

1. It is imperative that the need for precision be appreciated and stressed at all times.
2. The lathe itself must be kept clean at all times.
3. The mechanical condition of the lathe must be maintained. Slack and play



THE NEWEST BALDWIN HYDRAULIC PLYWOOD PRESS

SPECIFICATIONS

Platen Area R. to L. x F. to B.	130"x65"	130"x54"	106"x65"	106"x54"	102"x52"	78"x54"
Capacity—Tons	1072	790	865	715	597	475
Platen Pressure—p.s.i.	250	225	250	250	225	225
No. and Size of Openings	16—3"	16—3"	16—3"	16—3"	16—3"	16—3"
Stroke	48"	48"	48"	48"	48"	48"
Closing Speed—i.p.m.	194	194	205	203	203	179
Pressing Speed—i.p.m.	3.95	5.4	4.7	6.04	6.61	5.9

Note. These presses are also available with 20—3" openings and increased stroke.

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Baldwin Plywood Presses combine a number of important modern design features, all aimed at maximum output and top uniformity. These include:

Welded Top and Bottom Platens, which combine lightness with maximum resistance to deflection.

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Easy Loading, through the use of guides, and provision of ample daylight for unrestricted entry of unpressed material.

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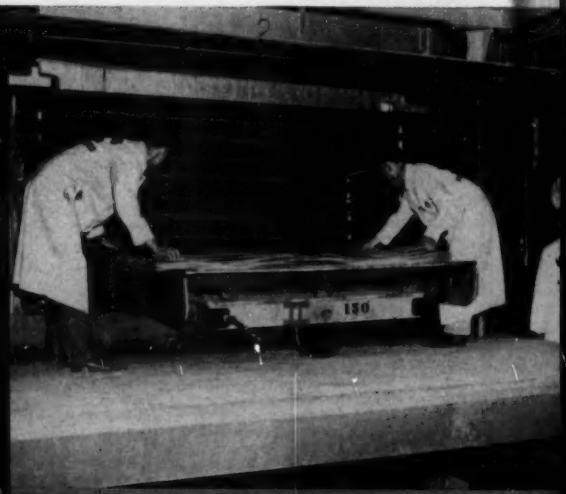
Operator at control panel. Concerning this press, the company president reported, "The organization . . . states without qualification that it is one of the finest pieces of equipment that we have in any of our plants."



Loading a Baldwin Hydraulic Plywood Press in the plant of a leading plywood manufacturer

must be kept out of the spindle bearings and adjustment of the caps must be controlled without fail.

4. The knives must be accurately ground to a standard height, angle of bevel, and degree of concavity.
5. The roller bar assembly must be kept clean and free from pitch.
6. The roller bar should be constantly checked for local wear and replaced if the diameter is worn more than 0.010 inch in local spots.
7. The cap of the roller bearing block must be maintained to permit the roller to revolve freely but with a minimum of clearance.
8. A point and a blank scale segment should be provided for the pressure setting, once the setting lines for the normal pressure for each thickness has been determined from experience.
9. A micrometer gauge should be provided for obtaining the proper setting of the height of the pressure roller to the knife edge in accordance with a tabulation of the optimum height for each veneer thickness.
10. Gauges should be supplied to insure that the knife edge and the pressure roller lie in parallel vertical planes.

It is not difficult to vary slightly a single factor while keeping all others constant, and thus determine the optimum setting for each factor for each thickness and species to be cut. It cannot be overstressed that in this operation, which requires quality cutting, each and every setting and adjustment must be a *precision* setting. This means: precision maintenance; precision in cleanliness; precision knife grinding, using a micrometer; precision in alignment of pressure cap to the knife carriage (with gauges); precision in setting heights of roller in respect to knife edge using micrometer gauge; precision in alignment of roller to knife with feeler gauges; precision in setting pitch to proper graduation; and precision in setting pressure to proper graduation.

Lathe Set-up Procedure

Following the principles, rules, and techniques of good lathe operation comes the set-up procedure. It may be done best by the following procedure:

1. See that both way surfaces and spindle lines lie in a common horizontal and vertical plane; that the knife bevel is correct; that there is no slack in the feed screw bearings and no play between the feed screws and feed screw nuts; that the main bearing is adjusted to provide minimum running clearance; that there is no excessive wear between the spindle and sleeves and no wear between the slide blocks and the knife carriage trunions; that the pitch rollers contact the pitch tracks; that the feed gearing is set for desired thickness; and that there is no roller bar assembly in the main pressure cap and no knife holder attached to the knife carriage.
2. Run carriage back and forth through its full travel and see that way and pitch track surfaces are clean and free of exuded pitch. Check surfaces in main pressure cap for cleanliness. Check set screws for free turning. Check surfaces on the knife carriage for cleanliness, rust, and raised spots. Check knife holder screws for proper oiling and performance.
3. Bolt two of the gauge plates to knife carriage, one at each end. Use gauge blocks to check alignment of main pressure cap to secure preferred alignment.
4. Secure roller pressure bar assembly from grinder room and check for cleanliness, "bugs" on seating surfaces and roller clearance.
5. Install roller bar assembly.
6. Secure knife and holder assembly from grinder room and check for cleanliness, "bugs" on seating surface, position of knife in holder, angle of bevel and sharpness of knife.
7. Install knife and holder. Adjust with hoist bar. Start clamp screws by hand and set same with impact wrench. Check fit of knife against carriage feeler gauge.
8. Adjust roller with relation to knife edge.
9. Back off roller until pointer indicates proper gap to insure cutting proper thickness. Check with feeler gauge.
10. Set each end of roller with micrometer gauge.
11. Recheck gap between roller and knife with feeler gauge.
12. Set knife pitch for species and thickness to be cut.

The lathe is now ready to cut veneer. Slight variations in the pitch and pressure settings may be required as indicated by the sheet of veneer and the condition of block surface. Pressure and pitch adjustment, knife honing, relationship of roller to knife, size of roller bar, and correct knife bevel will vary from time to time, depending on a given set of conditions for each operation.

Reeling and Unreeling System

Most plants on the Pacific Coast employ the tray system in delivering green veneer from the lathe to the clipper, but our plant uses the reeling and unreeling system. As the green veneer comes from the lathe the "fish-tails" and "roundup," which come from the log while it is being made round, drop on to belt conveyors which carry them to the clipper. After the log has been made round, the end of the green veneer sheet is fastened to the reel by staple tacks. The speed of the reel is synchronized with the speed of the lathe which allows the veneer to be rolled up on the reel. When the reel is full it is pushed down to the green clipper where it is raised up on the unreeling machine for clipping.

There are several advantages in using the reeling system for pine. It gives the clipper operator much more time to do the job of grading because he is operating separately from the lathe. There is enough room to store a good two hours' run between the lathe and clipper. It takes less building space than the conventional tray system in the ratio of approximately 60 feet to about 100 feet required for trays.

The face stock is removed from the log first at a given thickness. Then the log is dropped out of the lathe and set aside until later in the day when it is put back into the lathe and generally run to a heavier thickness than the face stock. This, incidentally, calls for a different knife bevel.

The green clipper operators, of which there are two, attempt to clip the heartwood from the sapwood as well as to make given grades by clipping out defects.

The veneer moves from the clippers to the green chain on conveyor belts where it is pulled by hand onto trucks according to species, thickness, drying segregations, widths, and lengths. These truck loads are then taken to the driers.

Drying Process

The drying process is a very important step in the manufacture of good veneer. A constant supply of steam is of paramount importance. The amount needed will vary according to each operation but generally speaking it takes from 150 to 200 pounds of steam on a high pressure line to do an adequate job of drying within reasonable time limits. Proper instruments, such as master recording controllers, steam pressure controllers to eliminate line surge, and recording tachometers which indicate and record the rate of drying for each run, expressed in minutes should be provided. Proper air distribution and circulation must be adhered to in order to get uniform drying. The actual feeding of the stock into the drier has a great effect on correct air flow. If the veneer is fed end to end and side by side it will give the air little opportunity to leak by and around the pieces, but will force it into the proper channels for correct and uniform drying.

Proper drying schedules must be set up for each species, thickness, segregation, size of drier and type of drier. In a large 16-section drier the temperatures must be controlled by zones, of which there are three.

Drying schedules on pine, at our

Military Specifications For GLUES and DOUGLAS FIR

☆ ☆ ☆ ☆ **PLYWOOD . . . Recommended Materials to Comply**

No. of Specification Date of Latest Issue	TITLE	MATERIALS TO COMPLY		
MIL-P-66A **27 December 1949** ***Supersedes:* JAN-P-66**	Plywood, flat-panel		Douglas Fir Plywood to meet CS45-49	
		Exterior	Cascophen W-112 TW (Hot Press)	Glufil
			Cascophen W-112 HB (Hot Press)	Silvacon
			Cascophen W-144 (Hot Press)	Glufil
		Interior	Cascophen W-212 TW (Hot Press)	Glufil
			Cascophen W-212 HB (Hot Press)	Silvacon
			Casco S-240 (Hot Press)	No extension
			Casco S-250 (Hot Press)	No extension
			Casco W-1628 (Cold Press)	No extension
AN-G-8 **25 April 1942**	Glues, cold-setting resin	Type I	Cascamite 66M with M-42 (3.5 parts)	No extension
			Cascamite 151 with FM-50 (20 parts)	No extension
			Cascamite RF-88 with FM-120 (15 parts)	No extension
		Type II	Cascamite 12	No extension
			Cascamite 14	No extension
		Type III	Casco-Resin 5 with FM-62 (15 parts)	No extension
			Casco-Resin 150 with FM-142F (12-15 parts)	No extension
			Casco-Resin 150 with FM-108 (25 parts)	No extension
AN-P-43 **31 March 1943**	Plywood, aircraft, molded (fluid pressure)		Glues to meet JAN-A-397 or MIL-A-5534	
CG-456 **8 July 1941**	Glue, casein type, water resistant		Casco Grade A, Aircraft Joint P, 350, 231-P	
CG-496 **17 June 1946**	Glue, resin type (liquid and powder)		Same as AN-G-8	
JAN-A-397 **28 October 1948**	Adhesive, room-temp. and intermediate-temp.-setting resin (phenol, resorcinol and melamine base).	Type I	Class I — Cascophen RS-240M	
			Class I or II — Cascophen RS-216, RS-224	
		Type II	Class I or II — same as Type I, also Cascophen LT-67	
JAN-P-139 **22 August 1946**	Packaging and packing for overseas shipment. Plywood container grade.	Type A	Cascophen HP-402	No extension
			Cascophen HP-403	No extension
		Type B	Cascamite 66M (cold)	60 parts flour
			Cascamite 66M (hot)	115 parts flour, 5.8 penta.*
			Cascamite 151 (cold)	60 parts flour
			Cascamite 151 (hot)	135 parts flour, 6.75 penta.*
			Casco-Resin 5 (cold)	50 parts flour, 2.5 penta.*
			Casco-Resin 5 (hot)	100 parts flour, 5 penta.*
			Casco-Resin 30 (cold)	30 parts flour
			Casco-Resin 30 (hot)	68 parts flour, 5 penta.*
			Cascophen HP-402, 403	100 parts flour, 5 penta.*
			For veneers over ⅛" thick, reduce extender 33%	*pentachlorophenol
MIL-A-5534 **9 January 1950** ***Supersedes:*** **AN-A-45** **USAF-T4139**	Adhesive, high temperature-setting resin (phenol, resorcinol and melamine base).	Cond. A	Cascophen RS-216 with FM-60M (20 parts)	11.5 pts. Glufil
			Cascophen RS-240M with FM-124 (20 parts)	15 pts. Glufil
			Cascophen RS-224 with FM-128 (25 parts)	15 pts. Glufil
			Cascophen LT-67 with H-23 (6 parts)	20 pts. Glufil
		Cond. B	Cascophen HP-403 hot press	30 pts. Glufil
			Cascophen HP-402 with H-21 (4 parts)	No extension
MIL-P-6070 **29 March 1950** ***Supersedes:* AN-P-69a**	Plywood and veneer Aircraft flat panel		Glues to meet AN-A-45 (MIL-A-5534)	

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plant, vary from 33 minutes for 1/6-inch ponderosa pine sap at 300°F. to 9½ for 1/16-inch ponderosa pine heart at 220°F. These schedules will dry veneer to 8 to 12 percent moisture content. Most plywood plants want their stock dried as low as 3 percent for hot-press gluing.

Proper maintenance is very important with respect to the driers. They should be thoroughly cleaned each week. Pitch accumulation, knots, slivers, and debris must be blown out with air and a thorough inspection given all working parts at each cleaning. With driers operating at from 300° to 400°F. accumulations of such debris as well as excessive grease must be removed frequently to avoid fires. Fires spell lost production and damaged equipment.

As the stock leaves the driers it falls upon a dry sorting belt where the graders mark it for grade and proper sorting. Some stock is on grade as is, some has to be sent to the patchers to raise the grade, some to the clippers for further processing, and some to other graders who lay it up into panels for special orders.

Patching

The patching of lower grades to raise the grade has become an integral part of most plywood plant operations. There are three types of patches generally accepted for "single-line veneer." The "boat" patch is approximately 6½ inches long by 1⅝ inches wide at the widest part and shaped like a boat; the "cookie" patch is perfectly round with a diameter of 3¼ inches; the "Skoog" plug is also perfectly round but with a diameter of about 2½ inches. Both boat and cookie patches have a beveled edge to which glue is applied. Heat is used to set the patch firmly in place. The "Skoog" plug is merely a friction plug with a square edge and is held in place without any gluing. It is not satisfactory to use where single-ply veneer is to be transported any distance because it will fall out. It is intended for use in plants where the sheets are made into plywood.

The material from which patches are made should be high-grade face stock, heartwood preferred, straight, flat-grained and cut to uniform thickness. The patch-making equipment must be kept in perfect condition in order to make perfect joints. Most patches which are glued are set with urea-formaldehyde resin glues which are water resistant, and produce good tight-fitting joints. The application of the glue to the patches is done by several methods, the two most common being by brush or by spray gun. It is quite exacting and must be done with a great deal of care. Too much glue will cause the patches to fit improperly and not enough will result in "starved" joints, which in turn allows the patch to fall out. Patches must not be cut too far ahead of their use because if they shrink they won't fit. The glue must not be applied too early or it will harden and then fail to set when heat is applied. The room temperature has much to do with the working life of glue. The more uniform the temperature of the room the better the gluing operation. Most patches are set with commercially designed "patch setters" which can be adjusted for glue-setting cycles according to stock thickness, species, room temperature, etc.

Splicing veneers edge to edge is becoming a vital operation in most plants also, in order to produce wide sheets from narrow, and to produce certain desired patterns that do not result from the natural growth in the log. The newly designed splicing machines for the making of high-grade face stock perform best on stock thinner than ⅛-inch, although they can be used with high-frequency current in such a manner that they will do a good job on thicker stock. The machine commonly used for this job has a traveling chain bed with an overhead heating arrangement and contains a "calrod" heating element that sets the glue while the veneer passes along on the chain bed.

The material to be glued is usually prepared at a jointer which may be either the traveling-head type or the traveling-bed type. The edges are all jointed perfectly at this machine by the use of sharp knives which are placed in a rotating head. In most cases the glue is applied at this machine by use of either a rubber or metal roll passing over the smooth joints as they are made. The proper co-ordination of the jointer and splicer will make for good tight joints of uniform thickness.

Clipping

Dry clipping of veneer varies considerably with each operation and with the type of orders to be filled. In most plywood plants the veneer is used ultimately to make plywood, so much of the clipping can be done green, but in a veneer plant such as ours the dry clipping becomes a major operation. Much of the high-grade face stock in ⅛-inch thickness goes into the making of veneers from which door stile and rail faces are made. These have to be sized to exact widths of 4⅞ inches, 5⅞ inches and other sizes.

Cutting thin sheets into such narrow widths is costly and slow but is necessary in order to recover the high grades from what would otherwise be less valuable stock containing various defects. After the widths are cut according to order it is necessary to cut the stock to exact length. This should be done on a well-designed veneer trim machine saw.

Specially designed gang rip saws also increase production of stile veneers from a given width of sheet. However, the stock must be picked and graded for the operation. The stock must not contain any defect that is not permissible in a stile or rail as the stock is actually cut up "alive" and there is no opportunity to eliminate defects.

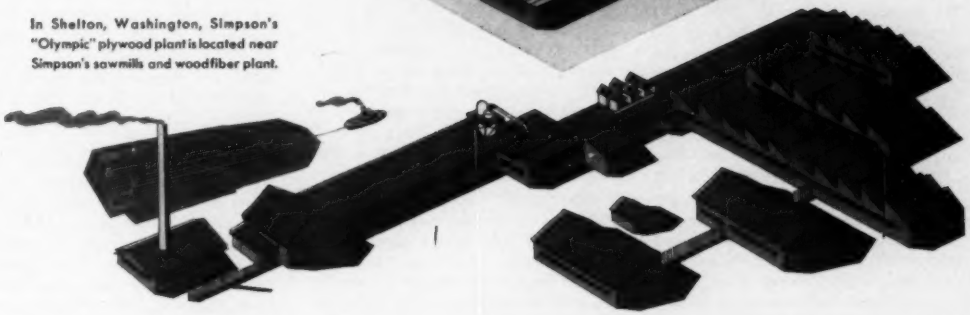
The cutting to length of rail type veneers is a slow and expensive task. Rail-type veneer is sold generally in short lengths from 16½ inches to 30 inches. A regular box-factory, California-type push cut-off saw does the job fast and as well as any. The saw operator can eliminate defects by cutting them out and still not slow up production due to inspection of stock.

Shipping practices for veneer vary a great deal with the type of order, the customer, and the method of transportation. Most customers want the high-grade face stock crated. Sliced stock is sold in crates from 6 inches to 12 inches wide, or if random width, up to 52 inches wide, where the veneer has been edge glued to 50-inch and 96-inch panels. Most stile veneers are packaged 50 pieces per bundle and gummed tape is used to tie the bundle. When large crates are desired the limit is generally 450 pounds to the crate. Lower grades are generally either loaded loose in the car or piled on lift truck pallets and strapped with a metal band. The scale is obtained either by piece tally or by measuring the pile and applying a formula that will give the square feet contained in the order. The bulk of the veneer is shipped in railroad cars, although, some does go by truck.

(Concluded on Page 102)

Simpson plywood plant at McCleary, Wash. Building at top, left, is the Simpson door factory.

In Shelton, Washington, Simpson's "Olympic" plywood plant is located near Simpson's sawmills and woodfiber plant.



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THE SIMPSON LOGGING COMPANY operates two plywood mills in the center of the Pacific Northwest, an important Douglas fir growing area. Integrated with Simpson's extensive logging operations, sawmills, door factory and woodfiber plant, these plywood mills contribute greatly to the stability and wealth of many communities dependent upon forest products for existence.

Logs to feed these various plants and mills come from forests which we "farm" as a permanent source of raw materials. Under this program, observing sound logging and manufacturing methods, we are assured a continuous supply of timber.

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Slicing Method

The second part of this paper will have to do with the slicing operation through the green preparation since the dry stock is treated in the same manner as the rotary cut stock.

The transportation of stock to the slicer varies a great deal with the type and size of plant and whether the stock be soft or hardwood. At our plant the stock for the slicer is picked on the head rig in the sawmill. Clear pine flitches are saved from the log as the sawyer watches for suitable material. The clear flitches are all cut from the sapwood of the log and should be free of nearly all defects. They should be cut from 6 inches to 28 inches in width and 4 inches or over in thickness. It has been the practice to use only stock 16 feet in length. The Idaho white pine cants are also cut on the head rig and are cut from the heart of the log. They should contain only small, firm, red-type knots that result from live branches rather than black-type knots that result from cutting dead branches. These cants are generally 6 inches, 8 inches, 10 inches and 12 inches in width and thickness.

Both cants and flitches are transferred to the veneer plant, which is a distance of 1,500 feet from the sawmill, on a 30-inch wide rubber conveyor belt. As they arrive at the veneer plant they pass down an inclined chain through a dip tank. The tank contains a chemical solution which prevents blue stain from developing in the material in storage. The cants are removed from the dip tank by an air-hoist and piled in lift truck units. As they are piled in these units they are scaled and the amount recorded in board feet. After the loads are scaled they are moved to a storage room. Added moisture keeps the stock from season checking before it is used.

In order to do a good job of slicing it is necessary to give the cants and flitches a good steaming or soaking to soften the wood. Three large steam boxes are fed with live steam which has been passed through water. A master controlling instrument maintains a constant temperature. Knotty Idaho white pine cants are steamed for 15 hours at 138°F. The clear pine flitches are steamed for 15 hours at 132°F. The stock is placed in the boxes in lift truck units. After it is taken out the clear flitches which contain bark on the edges, must be placed on a "spudding" table where the bark is removed before the flitch is placed in the slicer. The cants have no bark on the edges, as they are cut from the heart of the log.

The "slicer" machine itself is a precision instrument and must be maintained and set up as carefully as the lathe. The slicer operator should be a man who has a love for machinery and a world of patience. The machines vary with the make, model, and year, but basically they are all operated on the same principle.

The relationships between the nosebar, knife, and flitch table are the key points in cutting good, uniform veneer. The flitch or cant should be loaded into the slicer so that it is on an angle with respect to the knife. This gives a shearing action and results in better cut stock. The stock should be cleaned thoroughly to eliminate all dirt, fine sand, grit, or other foreign materials that dull the knife. It is more difficult to "fit up" a slicer than a lathe. Our slicer has a 17-foot knife as compared to the 8-foot knife on the lathe. Most of the stock at our plant is cut to 1/28-inch, 1/20-inch, 1/16-inch, or ⅛-inch thickness. However, slicing operations have been known to slice stock as thin as 1/300-inch in fine hardwoods. When cutting high-grade, fine hardwoods the stock is sold by taking samples from each flitch, which means that the veneer from each flitch must be kept to itself. In slicing pines this is not necessary so the stock is placed on a truck after being cut into 8-foot lengths. Clear flitches are sliced from the face side to the back to leave the "dog board" on the back. Knotty Idaho white pine is sliced to the center of the cant. Then the piece is turned over and sliced to the center again. In this way the dog board is taken out of the center. This is done because of the way the grain runs in the heartwood.

From the slicer the stock goes to the drier and is processed in the same manner as the rotary cut stock. The sliced knotty-pine is dried and if the customer wants the material edge-glued into face sheets a grader matches the pattern by using veneer from different cants in order to obtain a good distribution of the pine knots.

In conclusion, this is a new industry with respect to pine, but experience will teach what will finally be considered as practices which are good and how to avoid those which do not produce the best possible balance in operating techniques.

This paper, presented at the annual convention of the Forest Products Research Society, is so complete and comprehensive that The LUMBERMAN believes it will be of interest not only to pine veneer and plywood producers but to manufacturers of all other kinds of veneer all over the world. It is almost a text book on a subject of steadily increasing importance.—Editor's Note.

Ed Cone, well known Eugene, Oregon, lumberman, was recently installed as president of the Eugene Kiwanis Club.

A new one-man carriage has been installed in the *SDS Mill* at Bingern, Wash.

PLY-MATIC EQUIPMENT

Ply-matic Barker
Prepares logs for the veneer lathe with minimum waste and effort. Handles logs 5 to 12 feet in length.

Ply-matic Veneer Slicer
For high speed production of box or separator shook. Hydraulic feed. Wide range of adjustments.

Ply-matic Separator Groover
Produces 500 to 700 separators per minute. Adjustable to all standard sizes. Dual hopper feed. Two cutterhead assemblies supplied.

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HARDBOARD--The Forest Industries' Latest Major Development

During the past two years and particularly during the past year, the Wallboard industry in America has assumed the status of a major industry. There has likewise been continued tremendous growth of wallboard production in foreign countries which possess the raw material—WOOD.

The development of this new industry which is finding its most rapid strides and greatest growth in the west, is one of the outstanding new phases of the forest industry comparable to growth of the pulp and paper industry and later the veneer and plywood industry, but with this outstanding difference, namely that the development comes mostly from within the lumber industry. It is logical that sawmills and plywood plants should be interested in building and operating wallboard plants since they have the bulk of the standing timber supply and a vast supply of so called "waste," which all progressive operators are anxious to utilize. Due to high stumpage values there is every incentive in the world for the lumber companies to convert relatively low cost "waste" raw material into a merchantable product, such as hardboard. It is a significant fact that most of the wallboard plants which have come into production during the past year as well as those under construction, are owned by lumber companies. The wallboard business is a natural for the lumber industry.

Pulp, veneer and plywood developments have been largely by new firms and independent of the lumber industry. This was because of the abundance of peeler logs readily available in the open log market. But as the years have passed timber supply has become the all important factor and the trend has recently been for more timber owning lumber companies to engage in the production of plywood.

The new plants manufacture mostly Hardboard as distinguished from Softboard or Insulating boards. The reason is that broader markets exist for the Hardboards. Timber owning, lumber manufacturing companies are interested in hardboard among other reasons because if demand for or availability of lumber as such should decrease as well as it might, the trees can be converted into a readily marketable building and construction product. Consequently sound basic values remain for the trees in the forest, whether they be old growth or second growth.

Some idea of the status of new industry can be obtained from an examination of the following list of plants either now in operation, under construction, soon to be started or known to be or have been under serious consideration. The list is composed mainly of Hardboard mills but does include some Softboard or Insulating board plants which except for pressing aspects, differ little from the Hardboard units.

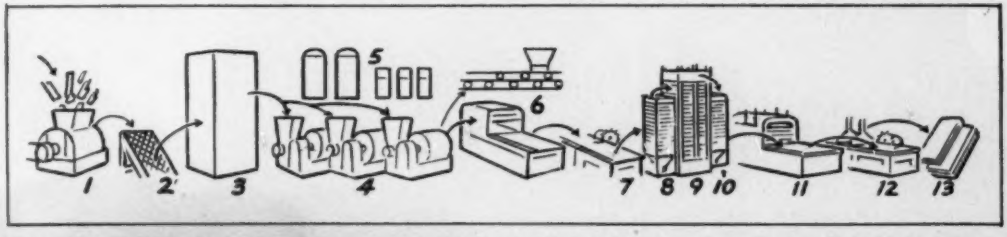
Anacortes Veneer, Inc., Anacortes, Wash.
Abitibi Power & Paper Co., Sturgeon Falls, Ont.
Cascades Plywood Corp., Lebanon, Ore.
Carrco Products Corp., Sacramento, Calif.
Chapman Mfg. Co., Corvallis, Ore.
Canadian Forest Products, Ltd., New Westminster, B.C.
Coos Bay Lumber Co., Coos Bay, Ore.
Canadian International Paper Co., Gastineau, Quebec.
Dixon Lumber Co., Andalusia, Ala.
Donnacona Paper Co., Ltd., Portneuf, Que.
Fir-Tex Insulating Board Co., St. Helens, Ore.
Forest Fibre Products Co., Forest Grove, Ore.
Robert Dollar Co., Glendale, Ore.
Long-Bell Lumber Co., Longview, Wash.
Masonite Corp., Laurel, Miss.
Masonite Corp., Ukiah, Calif.
Oregon Lumber Co., Dee, Ore.
Pack River Lumber Co., Sand Point, Ida.
Oregon Fibre Products, Inc., Pilot Rock, Ore.
Rock Island Millwork Co., Rock Island, Ill.
Simpson Logging Co., Shelton, Wash.
Stoltze Land & Lumber Co., Columbia Falls, Mont.
Trafalger Mills, Ltd., South Nelson, B.C.
U. S. Plywood Corp., Anderson, Calif.
Puget Sound Products Co., Houghton, Wash.
Washington Hardboard Co., South Bend, Wash.
Williams Furniture Corp., Sumter, S.C.
Wood Conversion Co., Cloquet, Minn.

There are a few other wallboard firms in America which produce some hardboard, including U. S. Gypsum, National Gypsum, Johns-Manville, Celotex Corp., Flintkote Co., Armstrong Cork.

Announcement has been recently made that two of the above plants will be doubled in capacity. The Chapman mill at Corvallis, Oregon, will be enlarged to a capacity of 16,000,000 sq. ft. (⅛" basis) and the Canadian Forest Products Ltd. plant at New Westminster, B.C. will increase its capacity to something like 60,000,000 sq. feet per year.

Production of hardboard is on the increase throughout the world. The United States is the largest producer of hardboard. The estimated annual capacity of United States hardboard plants is 400,000 tons. Production figures are somewhat confusing. For the most part all types of fibreboards, hard and soft, are lumped together and computed in tons rather than on a square-foot basis. Hardboard production is esti-

(Concluded on Page 122)



This rough sketch indicates in a general way the "flow" in a hardboard plant from the time raw material, originating from various sources, reaches the plant until the board is finished. No two plants are alike either in flow, method or equipment. Each is designed to meet owners ideas, type of raw material available, local conditions, process employed and type, quality and quantity of product manufactured. 1. Chipper; 2. Screen; 3. Chip Storage; 4. Attrition Units—Defribrators, Pulpers; 5. Pulp and Chemical Storage; 6. Fourdrinier for wet process, or Forming Machine for dry process; 7. Cut-Off; 8. Press Loader; 9. Press; 10. Press Unloader; 11. Humidifier; 12. Trimmer; 13. Finished Boards.

What a LOG-LUGGER!

"The TD-24—best logging tractor built," says F. W. Headrick, Eureka, California

Enough board feet for a good five-room house—that's a single redwood log where Headrick Brothers operate, near Eureka, California.

It takes the International TD-24 to bring in logs like this—and because the TD-24 can turn with a load, keeping power on both tracks, can instantly shift without declutching into high or low range, it brings out more logs in a day's time.

Sure, it's packed with power—148 maximum drawbar horsepower. It does more work per hour—so much more—and asks so little in operation, maintenance, and repairs that you can make money logging timber areas that were never profitable before.

Want proof? Ask your friends in the timber country. See your International Industrial Distributor. Put the TD-24 on your toughest job—it's a pushover for the champ!

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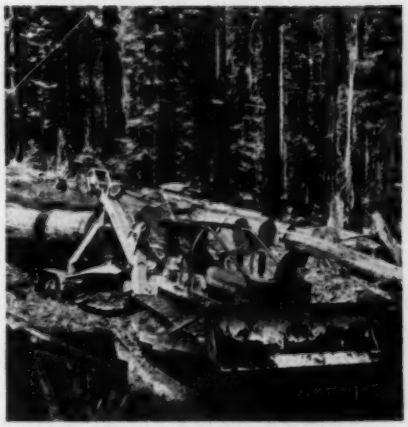

MAKING LIGHT OF TOUGH GOING, the TD-24 is a natural for this operation in virgin redwood timber. Undergrowth is heavy; entire area was burned over years ago, and 2000-year-old trees are all scorched.

AVERAGING 100,000 board feet daily, the TD-24 snakes 'em out for Headrick Brothers, in redwood forest near Eureka, California.

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POWER THAT PAYS

THERE IS NO MYSTERY ABOUT HARDBOARD

AN ANALYSIS OF THE ECONOMICS AND PROBLEMS RELATED TO THE PLANNING, CONSTRUCTION AND OPERATION OF A MODERN HARDBOARD PLANT

By WAYNE LONG
SALES ENGINEER
AMERICAN MANUFACTURING CO.
TACOMA, WASHINGTON

There is no mystery about hardboard.

There have been many articles written about hardboard and its production from mill waste. Most of these articles have been written by technical men for technical men and have been rather mysterious and confusing to the layman. When the term layman is used, it refers to the mill owner, or operator, and the members of the Board of Directors, those not familiar with the technical aspects. The layman isn't necessarily so interested in the fine chemistry of hardboards as he is in the economical feasibility of producing them. This report is of a non-technical nature and is intended to eliminate some of the confusion which now exists regarding hardboard.

We know that hardboard can be produced economically and that in most cases the "waving of a magic wand" has very little or no effect on the quality of board produced.

We have had an opportunity to analyze most of the processes in the entire world for manufacturing hardboard. We have found that the machinery requirements are basically the same in all processes with changes in procedure resulting in different types and qualities of board.

When you stop to analyze what a piece of hardboard is, you will realize that it is merely a bunch of granules or fibers held together by some sort of binder. In fact, a panel could be made from small gravel or sand by merely adding sufficient quantities of binder and putting the mass in a press to get uniform thickness. When the binder sets or cures you have a panel. This same principle appliies to making a panel out of wood particles, whether this be in the form of chips, granules, fibers, or bundles of fibers.

TWO TYPES OF BOARD

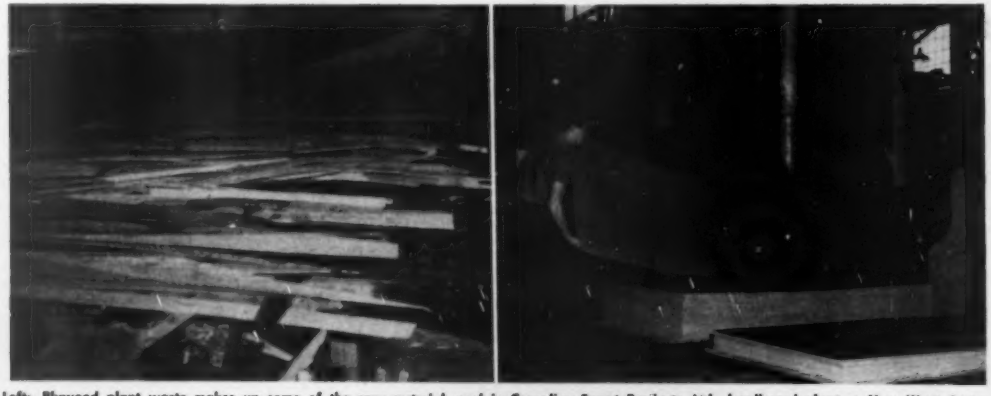
To better understand the entire picture lets look at hardboard as being in only two classifications; namely, granular and fibrous. Incidentally, from here on through the balance of the article the classifications of type of bardboard are strictly our own ideas and may not necessarily agree with those of wood chemists and other technologists; but once again, we are not attempting to classify hardboard for the technical men. We are attempting only to classify it in such a manner as to be most understandable to the layman.

GRANULAR TYPE

The granular type of board basically is composed of wood particles having little or no difference between their length and width. For practical purposes assume we are talking about sawdust. This type of board falls into two different categories and for want of better terms we use the classifications chemical and mechanical.

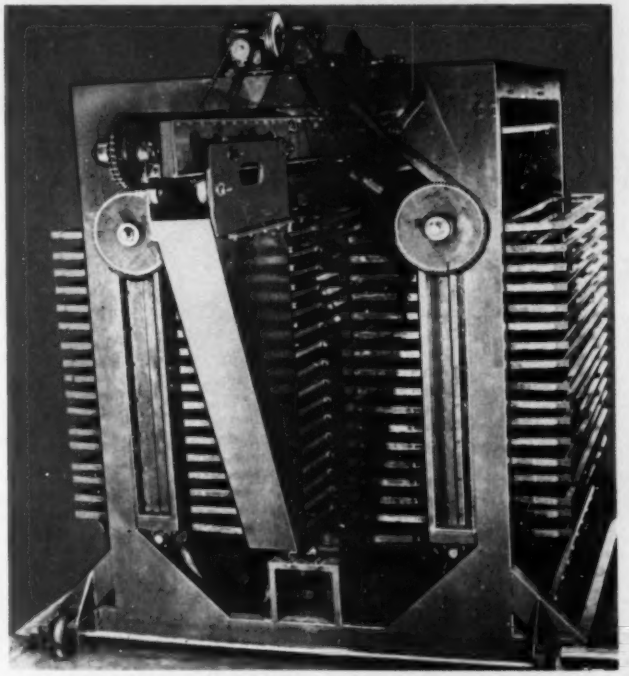
The chemical class of board is one which is made by using high temperatures, high pressures, and little or no synthetic binder. In other words, sufficient temperature (over 350°F.) and pressure (over 500 PSI) to promote the flow of the natural binders found in the wood. The reason we term this a chemical class of board is that we feel that the heat and pressure have caused a chemical change in the wood particles so that they no longer retain their original identity as wood. It is believed that certain chemical additives can aid this processing.

The mechanical class of board is one which is made by using low temperatures, low pressures and relatively greater amounts of synthetic binders. For all intents and purposes it can be assumed that the wood particles are merely glued together.



Left: Plywood plant waste makes up some of the raw material used in Canadian Forest Products, Ltd., hardboard plant at New Westminster, B.C. Right: Showing finished panels in the New Westminster plant.

AMERICAN MANUFACTURING CO. COVERS THE FIELD IN THE HARDBOARD INDUSTRY



This Self-Elevating Charger is one of many units designed and built by American to provide maximum production.

As prime suppliers to Mill and Plywood Operators of Handling Equipment; Transfer Units; Sawing Equipment and numerous specially designed operations, we long ago saw the need for production machinery to handle wood waste.

Keeping in close touch with various pilot plant operations our Development Engineers were able to provide the answers to many production problems.

At the present time we are furnishing three large production Hardboard Plants with American built equipment such as the Self-Elevating Charger, which is illustrated here, and its Companion Unit, the Self-Declining receiving rack. AMERICAN Equipment is versatile and easily adapted to each production requirement—Proved by the fact that all three plants being supplied by our equipment are using distinctly different processes.

Economical production of Hardboard demands the minimum of labor hours. American with its completely engineered Press Loading, Unloading and Auxiliary Equipment is your answer to profitable production.

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A Downingtown Fourdrinier in the plant of the Canadian Forest Products Co. This type of machine is used where the wet process is employed.

In fact, the term "mechanical" is used because the binder is a mechanical means of holding the particles together.

In both of the above classifications, as in most classifications of hardboard, other additives can be used to make the board vermin-proof, fire resistant, moisture resistant, etc. This all depends on what qualities are necessary to meet the demands of the market.

FIBROUS TYPE

The fibrous type of board basically is composed of wood particles having generally greater length than width. This can cover individual fibers, bundles of fibers, or actually wood chips, slivers, or shavings. In this type of board we feel that there are two basic classifications; namely, wet and dry. Some prefer to add another classification here which they call "semi-dry." For all practical purposes we define a wet process board as having moisture in excess of fiber saturation and the dry process board as having moisture in quantities less than fiber saturation.

The wet class of fibrous hardboard usually is characterized by the screen markings on one side, which makes a "surface one side" board. Screen is employed basically to allow for the escape of excess moisture and steam which could cause a "blow-out" if trapped in the mat. A wet class board can be made with "surface two sides" by employing the principle of re-pressing soft board. This, once again, takes high pressures and temperatures. Therefore it is evident that the wet type of fibrous board can be either chemical or mechanical, as defined in the granular boards.

The dry sub-class of fibrous type hardboard can be made with "surface one side" or "surface two sides" depending upon the amount of moisture present in the fibrous mat as it enters the press. A dry process board can be made from green waste with relatively high moisture content. It can also be made from relatively dry material such as waste from kiln dried lumber or from green waste that has gone through a drying process.

The dry sub-class of board can also be classified into the chemical and mechanical classes as we did with granular board.

Now, under the classification of fibrous types, we take a look at the sub-class we call "others." This particular category covers most other types of board. For practical purposes, we refer to: 1. Chip Boards. 2. Core Boards. 3. Combinations of chip boards and core boards.

Our term chip board is used for a board made up entirely of chips of approximately the same dimensions. This type of board can also be classified as either chemical or mechanical as before.

The term core board generally is used to denote a board made up of pieces of wood not necessarily the same size or shape. This board can be made from hammermillings and is generally known as mechanical and not a chemical board. In other words, these pieces of wood are merely glued together and generally under relatively low pressures and only enough temperature to cure the thermosetting binders. This board is usually a low density board and can be used very effectively as core for the furniture and door industries.

The "combination" board is one which is made by having a relatively thin layer of chips on both sides and the center being comparable to the "core board" as listed in the previous paragraph. This type of board is also usually a low density product and can be used effectively as a wall paneling or, because of its inherent dimensional stability, it is very good furniture core stock.

Uniformity of chips which go into the production of 'Hardboard Panels' by the new Forest Fiber Products company at Forest Grove insures finest quality in the finished product. Plant worker checks to make certain the chips are being cut to the proper size before they go on to the next stage in processing.

OPERATIONAL REQUIREMENTS

In all probability most mill owners and operators have been considering the hardboard picture and wondering if they should or should not be interested. We feel that there are four major and one minor considerations which should be met before the mill owners should take active steps to get into the hardboard business.

The first consideration, of course, is "raw materials." He should have available to him sufficient usable wood waste to make the product or products for the type of market he is soliciting. As a rough yardstick he will need approximately 50 tons of green waste per day to produce approximately 50,000 sq. ft. of ¼" thick board. If dry waste is available approximately 50 tons per day will produce a little under 100,000 sq. ft. per day of ¼" thick board. He should also check on the price and availability of binders and other additives he may desire to use in his board. At present we know of no area in the United States or Canada where either the price or availability of such binders or additives is a problem.

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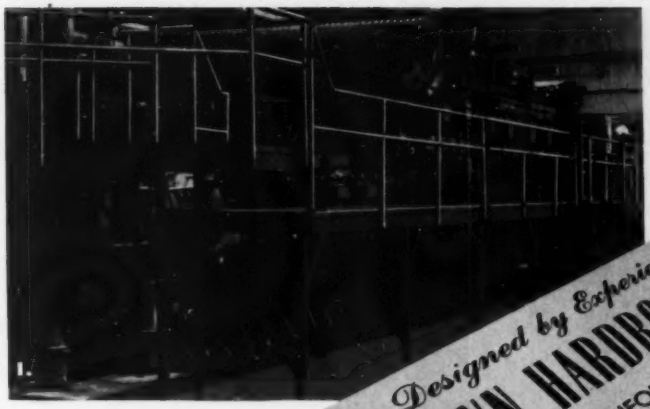

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Beginning with Downingtown's exclusive multi-pass, flow spreader headbox, through the forming machine and water removal in the press section to final delivery of the board, each operation has been designed for maximum efficiency . . . to produce more tons of board for every horsepower of input.

Downingtown designs and builds Fourdrinier type hardboard machines to meet specific requirements of various types of raw materials available, the forming characteristics of the fibres and the specifications of the finished board.

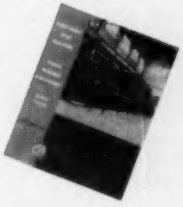
Downingtown engineers will survey your operations to determine the type of machine best suited to your requirements whether they be for the utilization of waste material or the modernization or expansion of existing facilities.

1. View of a large Downingtown Board Machine looking from the headbox toward the Fourdrinier type forming section and the pneumatic cylinder loaded press section.

2. A typical Downingtown spring-loaded Press Section, showing five sets of presses, the first and last of which use suction rolls both top and bottom.

3. This is an elevation drawing of a four foot hardboard machine with no suction rolls. The machine produces board for both wet and dry processes.

Write for Bulletin No. 549 which describes details of Downingtown Board Machines



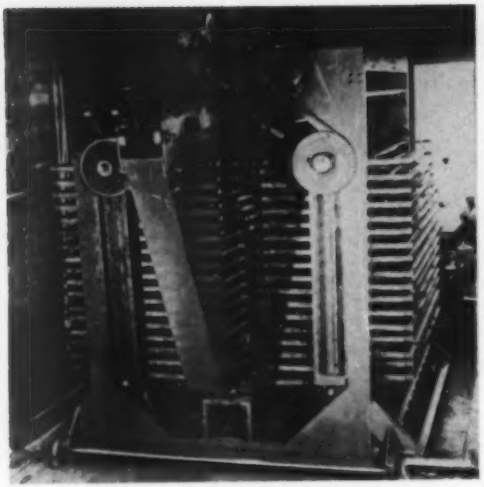
DOWNINGTOWN MANUFACTURING COMPANY, DOWNINGTOWN, PA.

Pacific Coast Representative: John V. Roslund, Pacific Bldg., Portland 4, Oregon.

DOWNINGTOWN

HARDBOARD MACHINES

DESIGNERS AND BUILDERS OF PAPER MAKING MACHINERY SINCE 1880



Hardboard press charger designed and manufactured by American Manufacturing Co., Tacoma, Wash. This press loader—with companion unloading device at outfeed side of the press—are key pieces of equipment in flow system of a hardboard plant, making possible continuous press operation. As the last panel leaves the press, first panel from charger is loaded into press.

The next major consideration is the facilities necessary to produce hardboard. Naturally, he should have a plant site near his major source of supply of raw materials or at least accessible to cheap transportation of such raw materials. He must be sure that he has a continuous supply of adequate power for the operation of the plant. Our computations show that the power requirements are relatively low but power should be available 24 hours per day, 7 days per week. He should be sure that he has adequate means of sewage disposal, which in some localities could be a problem. And then he, of course, needs the machinery to produce the board. This machinery is mostly standard machinery and most of it could be usable if he were to change the type of product he plans on making. The machinery briefly is composed of chippers, attrition mills or grinders, forming machines, conveyors, hot press, hot press loaders and unloaders, edge and end trim saws, humidification chamber and packaging equipment.

The next major consideration then is an outlet for the end product. Actually, some people feel that this should be the first consideration believing that if he doesn't already have a market he shouldn't even think about producing hardboard. We feel that the market has already been established and the public has already been educated to accept the product. Every plant now producing hardboard is running full time and most of them are actually falling behind on filling orders. There are any number of ways to get the product on the market. The usual ones are through the ordinary channels of brokers and dealers to reach the open market. Another very good market that is very far from reaching the saturation point, is in remanufacturing. This refers to door plants, cabinet shops and furniture manufacturing plants. The product itself can be used to advantage almost any place they presently are using plywood, because hardboard has most of the good qualities of natural wood with very few of its drawbacks.

The next and final major consideration is "capital." A mill owner or operator can spend as much as he wants, or almost as little as he wants, depending on the process adopted, the size of operation, and its economics. As a rough figure, a small economical plant could be put in for $100,000. However, for large production and certain processes the cost may reach $1,000,000.

The next consideration, and this we feel is a minor one, is "personnel." The reason we feel this is a minor one is that you do not need highly trained people to operate a hardboard plant. We do feel it advisable to have at least one technical man but he should have charge of the laboratory and is not needed as a production worker. In general the labor cost per thousand square feet is lower than in other woodworking industries. Most of the operations in the production are automatic, therefore demanding no particular skill as far as labor is concerned.

HOW TO GET INTO THE ACT

After reading through all of the above and deciding he wants to get into the hardboard business, the mill operator is wondering just how to go about it. We can assure you that one of the most spectacular and confusing ways is to drop a hint to a machinery peddler and before he realizes it he will be in the hardboard business. However, there are better ways and he should be guided by the past failures and successes. In most cases the failures have been those who jumped into the business without carefully analyzing the entire program. The successes almost invaraibly are people who have experimented in their laboratories, expanded to a pilot plant operation, and then into full scale production.

Basically we feel that there are three main routes that can be taken to reach full production of hardboard. Number one, and by far the easiest, is what is called a "turnkey job." This consists in contacting a company which has a process and the capabilities of building a plant; and have them handle the whole thing for you. Number two is to go to the private research laboratories and retain them to develop a process for you, then draw up specifications and have a reputable company build a plant to your specifications. Number three is to set up a small laboratory, hire a wood technologist; when the type of product is determined and the process is developed, expand to a pilot plant and then expand to full scale production.

(Concluded on Page 124)

This is the Lake Erie press which will be used in the new hardboard plant now under construction at Anacortes, Wash., by Anacortes Veneer Inc. This press is 1960 tons capacity with 20 openings designed to form finished panels 4' x 8'.

PRODUCTION PLUS!

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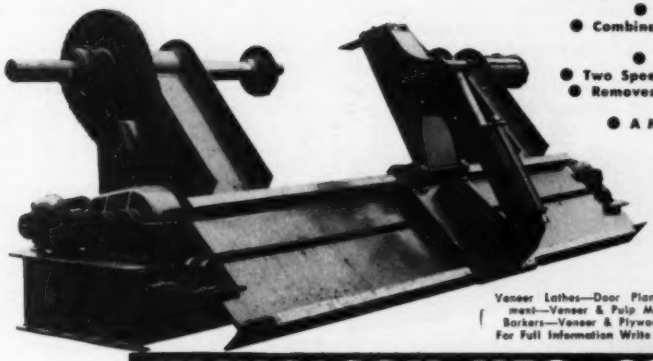

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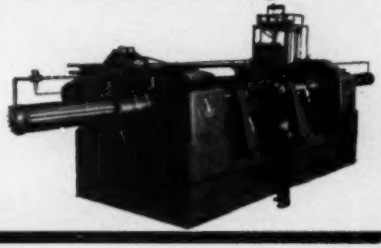

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REDWOOD PLYWOOD

Although plywood has been made extensively on the Pacific Cost from Douglas fir and some other Northwest species, such use of redwood in plywood is still in its toddling steps. Some redwood panels have been produced at Douglas fir plywood plants of the Northwest. However, a plant at Eureka, Calif., has undertaken the commercial manufacture of redwood plywood and has turned out a few million square feet of panel from the species. This plant, Eureka Plywood Division of M & M Woodworking Co., went into production in summer of 1949 and has since made both Douglas fir and redwood plywood.

According to a spokesman of the organization, forming redwood veneer by hot press into plywood panels requires more special handling than does Douglas fir—processing of redwood plywood is somewhat like that for pine and produces a panel similar to pine in texture.

The redwood plywood panels have the characteristic durability, color, resistence to termites, fungus, mold and rots of redwood as well as most of the usual advantages of plywood.

Demand for redwood plywood is particularly strong in the Pacific Islands where termites and weather conditions take heavy toll of less resistent woods.

The product's uses include interior and exterior applications, both decorative and technical, but the largest single use is said to be for interior finish. Considerable redwood plywood demand has developed, especially in Southwestern United States, for construction of outside living rooms, breezeways, fencing around the home, entryways, car ports, and other such attractive building. Use in specialty products, such as flush doors, has also been noted.

The Eureka plant, built on the Hammond Lumber Co. properties (which organization is an important source of logs for the plant), has one lathe and one 20-opening hot press, processing both Douglas fir and redwood into 4 x 8 ft. plywood panels.

Redwood panels are currently made in five thicknesses, from ¼" to ¾". The ¼" panels lead production on a square-foot basis, consecutively followed by ¾", ⅜", and ½" and ⅝".

Crack Obliterator

The Stremming Veneer Co. of Maplesville, Ala., is using a foot-controlled modified air jack hammer for obliterating cracks in face veneer after taping and before manufacture into plywood. The machine was devised by plant superintendent Chester Gerlach.

The firm is using Acme steel-strapping on all its plywood packages before shipment.

President R. W. Stremming said the company went largely on a piece-work basis to cope with the increased production costs resulting from the minimum wage increase.

The company has just purchased an additional Coe veneer dryer to supplement the two in regular use.

Loading platform at Stremming Plywood Co., Inc., Maplesville, Ala., counterbalanced for adjustment to any height truck.

DESIGNED FOR EXPANSION
This 4000-ton R. D. Wood hydraulic platen press fits into plant expansion programs. It's set up with 10 openings, but is designed for 6 additional openings as production increases. It has an operating cycle of closing, pressing, and opening on ⅛" and ¼", 48" x 108" hard building boards of less than 60 seconds, exclusive of dwell, loading and unloading time. Main rams stroke is 56". Press height is approximately 35'. A full range of sizes and capacities is available.
• Write, without obligation, for catalogs on R. D. Wood hydraulic platen presses.
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OPEN UP NEW PLYWOOD SALES *With*

Long Panels

MANUFACTURED ON

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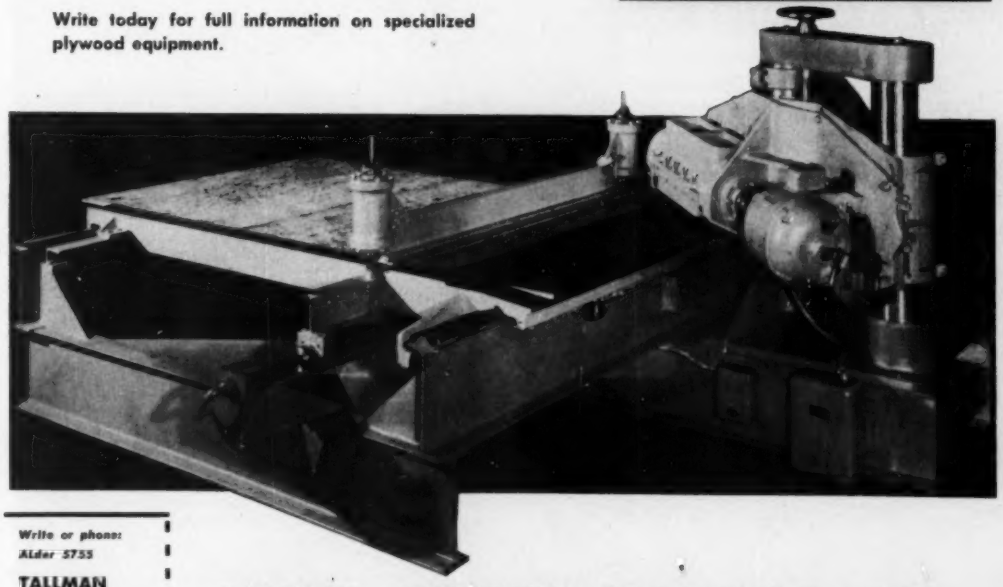
SCARFING EQUIPMENT

THE LAMB-GRAYS HARBOR Scarf Press, illustrated at the right, is a 16" x 66" double opening hydraulic press. Panel size 60" width; PSI 200 lbs. Available in widths up to 120" and additional openings.

BELOW is illustrated the Lamb-Grays Harbor 66" plywood scarf jointer for jointing 60" panels. Angle of cut variable from 1" to 8" taper to 1" to 12" taper. Also available in sizes for wider panels.

Write today for full information on specialized plywood equipment.



Write or phone:
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Factory Representative

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INCORPORATED

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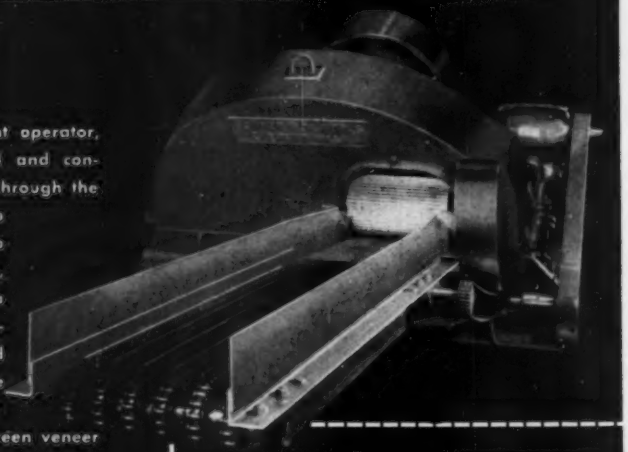
WITH THE SUMNER 66 INCH, 6 KNIFE...

VENEER CHIPPER

BUILT IN 1939, OVER 20 INSTALLATIONS SINCE 1947!



Perhaps you, as a plywood plant operator, have been overlooking a potential and consistent source of profitable income, through the conversion of your veneer rejects into uniform pulping chips for nearby pulp mills or board mills? Other operators, all along the Pacific Coast of Canada and the United States, have recognized the value of this by-product and have made sales contacts that are bringing them substantial dollar in come every day their plywood or green veneer plant is in operation.

The roster of SUMNER 66"-6 Knife Veneer Chipper installations has been growing at a phenomenal rate within the last year or two. The first Veneer Chipper, a SUMNER exclusive, was installed in 1939 and, by mid-1951, present commitments indicate that there will be almost 30 SUMNER Veneer Chippers in operation!

SUMNER Veneer Chipper installation, operation and maintenance costs have always been nominal.

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Anacortes, Wash.

North Pacific Plywood, Inc.
Tacoma, Wash.

Canadian Forest Products, Ltd.
(Pacific Veneer & Plywood Div.)
New Westminster, B. C., Canada

Peninsula Plywood Corp.
Port Angeles, Wash.

Puget Sound Plywood, Inc.
Tacoma, Wash.

Robinson Plywood & Timber Co.
Everett, Wash.

Simpson Logging Co.
McCleary, Wash.

Western Plywood Co., Ltd.
Vancouver, B. C., Canada

Walton Plywood Company
Everett, Wash.

Farwest Wood Products, Inc.
Kenmore, Wash.

Three Rivers Plywood & Timber Co.
Darrington, Wash.

Northwest Door Company
Tacoma, Wash.

Buffelen Manufacturing Co.
Tacoma, Wash.

Weyerhaeuser Timber Co.
Lumber Div.
Longview, Washington

Shasta Plywood, Inc.
Anderson, California

Industrial Plywood Corp.
Willits, California

Columbia Veneer Company
Kalama, Wash.

Coast Plywood Manufacturing Co.
Colpella, Calif.

Vancouver Plywood Co.
Vancouver, Wash.

*Cascades Plywood Corp.
Portland, Ore.

Stevenson Plywood Corp.
Stevenson, Wash.

*Donald W. Lyle, Inc.
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*Aberdeen Plywood Co.
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*To be installed in late 1950 or early 1951

SUMNER IRON WORKS
Since 1892
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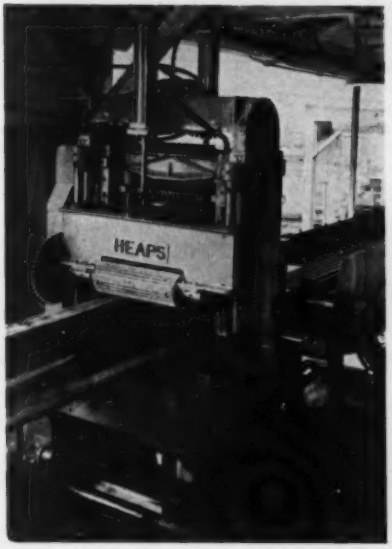
New! Oscillation now applied to HEAPS Swedish-type GANG SAWS!



GREATER PRODUCTION THROUGH OSCILLATION

. . . is obtained for the same feed and same speed with the same size of cants or logs. This greater production is brought about through the elimination of the "holding back" effect in non-oscillating type gang saws—and by permitting full saw clearance on the upstroke. Result: tremendous increase in production—and profits!

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For complete information on our log and cant gang saws with oscillation—or our complete line of sawmill machinery—and name of your nearest distributor, drop a line today to:

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NEW WESTMINSTER, BRITISH COLUMBIA

New Oregon Plywood Plant

Central Oregon Plywood, Oregon Ltd., a newly formed organization, announced in mid January plans for building a plywood manufacturing operation. Immediate start on construction of a green peeler unit at Elkton, Ore., is anticipated and tentative plans call for construction of dry-end section of the operation at Cottage Grove. At press time official key personnel included, Willis E. Smith, formerly chief engineer of Springfield Plywood Corp. and for the past year manager of Industrial plywood Corp., Willits, Cal., is general manager of Central Oregon Plywood; Maynard Wilson, Cottage Grove attorney, secretary - treasurer; and Jerry Egan, assistant general manager and superintendent.

Mr. Smith told The LUMBERMAN the organization anticipates getting the peeler end at Elkton into production of green veneer by late spring or early summer. This unit, using a Jackson electric - powered lathe with 110" knife and 84" swing, will produce an estimated 1½ million square feet of veneer (on ⅜" basis) per month.

The company has purchased a mill site at Cottage Grove. It is tentatively planned that the dry end of the operation will be built here subsequent to getting green end into production. Dry end will probably start converting veneer into plywood panels early in '52. Company stockholders own timber estimated in excess of 27MM ft. Headquarters of the organization will be established shortly at Elkton.

New Plywood Plant

A new plant is being built in Arcata, Calif., to be known as the Arcata Plywood Co. Mr. A. Rochlin, president, is also head of the Plus-Wood Industries, Oshkosh, Wis. Mr. Trygve Stolsen, well known plywood operator, is the manager.

The main equipment, most of it supplied by A. M. Conway & Son, Portland, comprises a model 244 Coe lathe with and 84" swing and 113" knife. Other accessory equipment will be decided on later.

Another Co-operative Planned

A group known as the Columbia Plywood Association headed by J. J. Oxley, Portland, Ore., business man and associates, proposes to build a co-operative plywood and veneer plant on the site of the former Clark & Wilson Lumber Co., Linnton, Ore. The plant is expected to cost $1,500,000. It will be built, it is said, to cut both domestic and foreign logs. The plant is expected to produce 6,000,000 sq. ft. of plywood per month. The Columbia Plywood Association has offices at 302 SW Fourth Ave. at Oak St., Portland .

Dry Kiln Club Elects

New officers for the Southern Oregon - Northern California Dry Kiln Club for 1951 are: Chairman, Paul Lyman, Car-Ad-Co Company, Klamath Falls, Ore.; Vice Chairman, Lyle Hickman, Klamath Lake Moulding Co., Klamath Falls; Treasurer, Orland Lynch, Weyerhaeuser Timber Co., Klamath Falls; Leon H. Rvgel, secretary, Dunsmuir Lumber Co., Dunsmuir, Calif.

Canadian Foresters

The Canadian Society of Forest Engineers is now to be known as the Canadian Institute of Forestry, the change of name having been decided at a recent meeting in Sault Ste Marie.

NEW DEVICES DEVELOPED IN CALIFORNIA PLYWOOD PLANT

One of California's oldest plywood mills is also one of the most progressive as was demonstrated to a LUMBERMAN field editor by A. J. Myers, superintendent of the plywood plant of the Long-Bell Lumber Co., Weed.

In quick succession Myers showed The LUMBERMAN a handy, one-man log hook; a simple bin sorting system for veneer; and a practically automatic cold press loader.

General manager of the Weed plant of Long-Bell is John Mantle. Myers has been with Long-Bell for 25 years.

The one man log hook, consists of a piece of 1½" pipe, any length desired to fit the length of logs being handled; a piece of 11/16" steel shaft, a spring, and a handle.

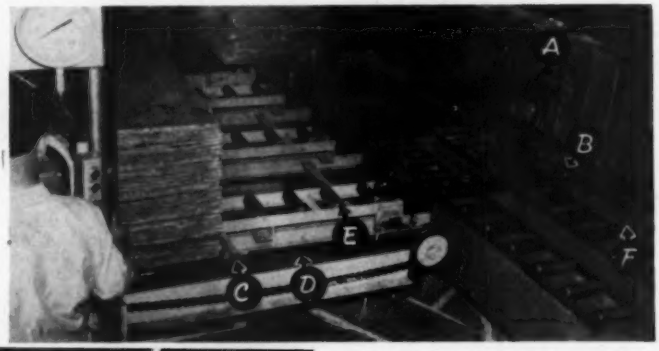
One end of the pipe is plugged and in this end is a heavy spring. The spring gives the bar about 6" clearance, to allow for small variations in the length of peelers. When different size peelers are being handled different length bars are used.

The hooks are hinged. To operate, the man picking the logs out of the peeler well to put the logs on the barker, positions the far end of the bar, sets the hook in that end, pulls on his end with the handle, the spring expands, the man sets the hook on his side, and with the other hand pushes the button on the electric hoist to move the peeler, out of the well to the barker, to move the peeler to the lathe, to remove the core from the lathe, etc.

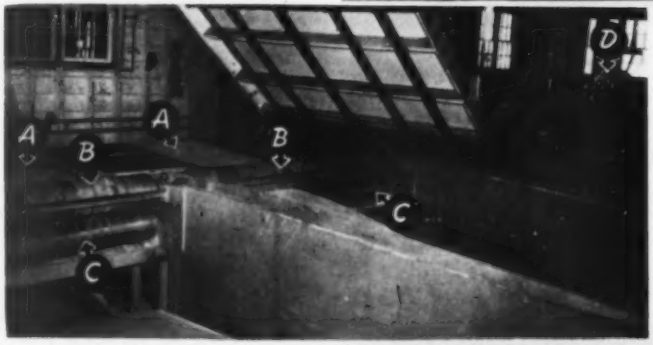
Veneer stacked mechanically

Hand stacking of green veneer has been practically eliminated at Long-Bell, through the installation of a bin veneer sorting system. Only three men are used on the veneer green chain.

Eight segregations are made from the Eliott Bay clippers—five for the top clipper and three from the bottom clipper.



Showing the one man log hook used in the plywood plant, Long-Bell Lumber Co., Weed, Calif., in action. (A) is the 1½" pipe—any length necessary; (B) shows the 11/16" spring actuated shaft; (C) is the hinge; (D) is the handle; and (E) is the hook.



Down the side of the green chain are eight Iron Swedes or green veneer pullers, and in front of each of these pullers is a bin made out of plywood.

The sorters are 66" live rolls mounted parallel to the green chain, and are driven by a single 3-hp. electric motor. Drive on the rolls

Iron Swede and bin veneer pulling system in use at Weed, Calif. (A) are sheets of veneer coming down the belt from the Elliott-Bay clippers; (B) shows a sheet of veneer entering a bin between a top (B) dead roll, and a live bottom roll (C); and (D) shows the 3-hp electric motor driving the live rolls through a Vee belt.

A view of the practically automatic loading system on the Maroff cold press. (A) is the air-powered ram, which shoves the pack or charge on to rolls (E), when jump rolls (B) are raised to lift pack off rolls (F) which bring it from the gluing machine. Bar (C), moving on chain (D), moves pack on to bottom platen of press, and when the charge is pressed, bar (C) is used to remove the charge also. Entire operation of charging the press takes about 20 seconds.

FOR OVERSIZE – PREMIUM QUALITY
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Panels 16' long and 4' wide now produced in sizable quantity. Longer lengths as ordered. Popular thicknesses: ¼", 3/8", ½", 5/8" and ¾".
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from the motor is by Vee belt. The veneer is shoved by the three offbearers between the two rolls of the iron Swedes. The top roll is a dead roll, and inoperative until the sheet of veneer is forced between it and the bottom roll, which is powered as described above. When the veneer is fed between the two rolls friction takes over, and the piece of veneer is shot into the bin with some force.

Says Myers: "The secret of the device is to have the rim speed on the power rolls twice as fast as the lineal speed of the conveyor belt from the clipper, and to get the rim speed coordinated to properly pull the veneer in relation to the speed of the belt to the power rolls.

If this is done, as it is at Long-Bell, the veneer piles up evenly and neatly, and there is much less breakage of veneer.

The bins are made of plywood, 4' high at the rollers, and 3'6" at the gate. Veneer accumulates on blocks on the floor of each bin. The only baffle used is the back gate, also made of plywood. The veneer stacks itself neatly, and when the bin is full, an electric jitney comes and picks up the load. A simple latch, and hinge allows the back gate or baffle to be opened.

It takes about 20 seconds to load the Marolf cold press at the Long-Bell plywood plant. Such speed in loading the press is obtained through the use of a practically automatic loading device.

When the charge or pack is glued up, it is shoved manually on to dead rolls, and centered to enter the press. The press operator steps on a lever, air raises a set of pump rolls, and at the same time an air activated ram kicks the charge or pack of glued veneer on to the loader to the press.

From here another device takes over to get the pack on to the bottom platen of the press.

This is a push bar, the width of the rolls, mounted on roller chain on both sides of the rolls, and powered with a gear reduction motor.

When it is time to unload the press, the operator presses a button, and the bar pushes the pack out on to dead rolls, where it is picked up and taken away by a jitney lift truck.

Willamette Plywood, Inc.

Willamette Plywood, Inc., Eugene, Ore., a comparatively new plywood producing firm, took over the Linscott Manufacturing Co. plant last May. During subsequent months equipment was installed for converting purchased green veneer into sheathing type plywood, production of which began last September. Volume, which reached 2 million square feet per month early this year, is expected to be increased to 4 million feet monthly by early summer with completion of a green veneer addition which is now under construction at the plant. An 8-drum Solem sander has also been scheduled for addition early this year to facilitate manufacturing finished, upper-grade plywood panels in addition to the sheathing.

Officers of Willamette Plywood, Inc. are A. C. Capps, president; H. W. Pendarvis, vice president; and W. B. Wilson, secretary-treasurer.

New Veneer Plant Starts

Western Plywood Co.'s new veneer plant at Quesnel went into production early in January, but the plywood operation will not be started until some time in June.

MANUFACTURING PROBLEMS OF THE PLYWOOD INDUSTRY

By JOHN BENE

PRESIDENT, WESTERN PLYWOOD CO., LTD., VANCOUVER AND QUESNEL, B.C.

Mr. Bene, the author of this article, is one of the recognized authorities on plywood production in Canada. His family was in the veneer and plywood industry in Europe for generations. He went to the Pacific coast shortly before World War II and before launching his own enterprise was manager for one of British Columbia's largest producers, Pacific Veneer Division, Canadian Forest Products, Ltd. Mr. Bene's new plant at Quesnel, augmenting the production of his first mill on the Fraser River near Vancouver, went into operation early this year. In a discussion of plywood industry, Mr. Bene first discussed some of the broad phases and after saying that by wise forest management and utilization, there should be ample timber to maintain the industry, he went on to discuss pertinent manufacturing aspects. These remarks are reproduced herewith.—Editor.

Returning now to the problems of manufacturing there are legions of them and I propose to give you only an outline of those that are most important. We have to increase the productivity, standardize the product, increase the yield from the raw material and closely control the quality of the product which reaches the market.

The productivity per man-hour must be steadily increased in the plant to compensate, at least in part, for increase in wages. I will discuss later the competition to plywood from synthetic boards like hardboard, gypsum board, etc. It should be kept in mind that the wage ratio in these synthetic products is much less than in the production cost of plywood, and any wage increase makes plywood's competitive position more precarious unless productivity is being increased simultaneously.

Increase in productivity is achieved by mechanizing the flow of material through the plant and by improvements in cutting, drying, patching, pressing and finishing machinery, by standardization of the product and by converting a more uniform log into plywood.

In Scandinavia, where the average veneer log diameter is 12" and the maximum 16", it takes fewer man-hours to make plywood of a certain thickness than over here where diameters vary from 12" to 8'. It is almost impossible to design equipment which will handle small and large logs equally efficiently and the great variations in log quality make it hard to balance the loading of plant equipment and to predict the output accurately. When our logs will come from managed stands the average log diameter will be less than it is today and there will be fewer clear faces, but it will take less man-hours, starting right from the extraction of the log, to make the plywood and there will be fewer variations in the grade of the product.

Due to increased mechanization the cost of building a plant is increasing steadily. In 1940 it cost about a half million dollars to build a mill to convert 75 M. feet of logs per 24 hours into plywood. Today it will cost twice that amount, but the output will be 20 percent more per man-hour than it was ten years ago.

Another problem which is closely related to increased productivity, and which is being tackled gradually, is the standardization of the product. Plywood can be made in infinite numbers of thicknesses from 1/32 of an inch to 4 inches or greater; in all kinds of sizes with the grain direction of the face ply parallel or at right angles to the long side of the panel, and in a large variety of species; and further, with the face and back in a number of qualities. During the last few years the seller's market permitted manufacturers to concentrate on making a few sizes only, mostly 4x8; only a few thicknesses, mostly ¼" and ¾" and only three grades—one for natural finish, one for paint finish, and one for sheathing where appearance is of no importance. The education of the public to accept the fact that plywood is a standardized product is of paramount importance here.

An Approach to Better Yields

Log cost is about half of the plywood production costs. It takes 100 cu. ft. of logs to make 40 cu. ft. of plywood. A few of the missing 60 cu. ft. actually disappear in contraction while drying veneers, but there is much room to improve plywood yield from the log. The most successful approach towards better yield is made along the following lines:

1. Design of improved barking equipment which actually will take *only* the bark off;
2. Increased clipping of whole piece sheets and patching of defects of these sheets instead of trying to build up the sheet from narrower clear component veneers;
3. Reduction of oversize in length, width and thickness by the use of more accurate equipment, greater care in manufacturing. If the veneer cut is smoother, less material has to be allowed for sanding and a lesser proportion of the high-grade face veneers is wasted. In some cases overlays are applied to the unsanded panel so that we can use the full panel thickness and obtain a smooth surface by laminating a resin impregnated sheet on top of the assembly.

Need Strict Quality Control

The last and most important group of problems in manufacturing is the necessity of a strict quality control. We know today how to make a product which will stand up satisfactorily to anything to which plywood can be reasonably subjected, but many times we see delaminated panels where so-called interior bonded plywood has been exposed to the weather. The completely waterproof bonding of plywood has been solved for many years now, and what remains is to outlaw the manufacture of plywood which is not fully waterproof. Such a step can be taken only after all plants have changed from a cold pressing to a hot pressing operation because the hot press is needed to make a waterproof panel. It will increase the cost of the glueline somewhat in some grades of plywood, but it will put in the hands of the public a product which will remain plywood whatever happens to it. When only waterproof glues are used and when independent inspectors will see that the guarding of face, back and core sheets in the various plants is uniform and up to specification, the public will get their money's worth wherever they obtain their sheet

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January 9, 1951

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In view of this experience we are glad to place this order with you, but please do everything possible to expedite delivery.

We take this opportunity to express our appreciation of the fine service we have had from your organization, as well as your representatives, E.V.Prentice Company.

Wishing you a Merry Christmas and a Happy New Year, we are

Yours truly,

HEDBERG LUMBER COMPANY
By Gunnar Hedberg

Jackson Veneer Lathes now lead in the plywood industry just as they have in the package industry for more than 50 years

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P.S. Mr. Fred Hedberg of Harbor, Oregon has just ordered a 110" x 84" JACKSON PLYWOOD LATHE, the *THIRD* JACKSON LATHE for the Hedberg family in the past 12 months!

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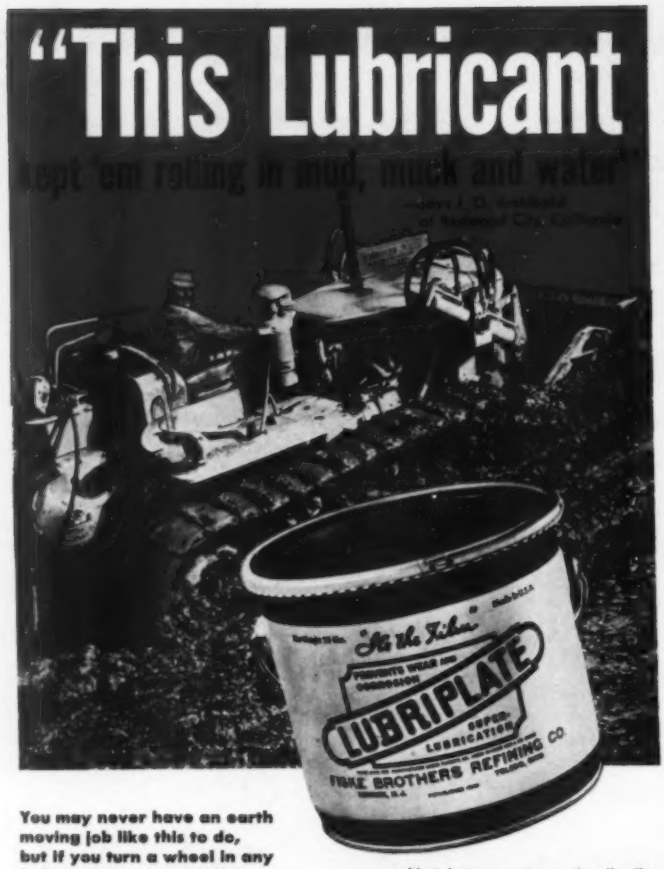

You may never have an earth moving job like this to do, but if you turn a wheel in any industry you can profit from Mr. Archibald's experience.

"The Leslie Salt Company called for bids for the conversion of 500 acres of salt marsh into crystallizing ponds for the production of bulk salt. The going was so tough that none of the several contractors invited to bid would take the job on a fixed price contract. Due to our success on similar work, the job was given to us on a cost plus basis.

"We moved in eighteen tractors as power units and the necessary Carryalls, Sheep Foots, Jeeps and other equipment. As soon as we removed the upper crust there was nothing but peat and marsh to run on. Tractors would sink in over the track rolls. To keep equipment rolling would require a special lubricant.

"Knowing from past experience that LUBRIPLATE No. 107 not only reduced friction to a minimum, but it also prevented rust even in salt water and would seal out the muck, we adopted it for track and general lubrication. We selected LUBRIPLATE APG-140 for all transmissions and final drives. The effectiveness of these two LUBRIPLATE Products is evidenced by the fact that during the entire job there were no replacements of track rollers nor were there any tie-ups of equipment due to replacement or breakage."

J. O. Archibald

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and to whatever use they put it.

Almost daily, new applications are being found for plywood and it is replacing sawn lumber more and more. It appears that the potentialities of using plywood have hardly been scratched, but we also have to be aware of the fact that new synthetic boards made from wood fibre, wood chips and wood shavings are being produced, which in some uses replace plywood effectively. It costs, usually, much less to make these synthetic boards and where structural qualities are not of primary importance and the customer does not insist that the product should have the appearance of wood, these hardboards do a very good job.

The competition of hardboards and related materials can be met by reducing production costs of plywood as outlined previously, and by combining plywood with some of the synthetic boards for, say, table tops, etc., to obtain constructions which combine the good qualities of both products. But the greatest assurance for the ever wider use of plywood is in maintaining an active research program in the use of and manufacture of plywood. Today, many government agencies, universities and, to a lesser degree, private industries, do research work but, generally speaking, this research is uncoordinated and somewhat haphazard. I am not aware that there is one single plywood plant in Canada which does not maintain really adequate research facilities, and the great cost of really first-class research work might be too much for any one manufacturing unit to carry. The centralization of all plywood research to one central agency, and adequate financing of this agency by public and private money, would solve our problem nicely and we have a good example that it can be done in the successful operation of the pulp and paper institute.

In my opinion it would be absolutely necessary to pay the research staff salaries on a level with those paid to first-class men in private industry. By appointing a program forming body from top business executives and responsible government department heads, by hiring a director of research at say $20,000 a year and and a group of really well-paid specialists for detail work, the foundation would be laid for an organization to produce results, and I am convinced that the contribution of the industry would be repaid many times.

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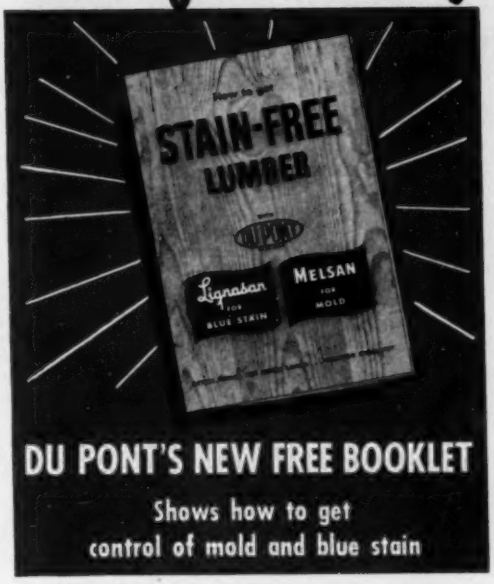

DU PONT'S NEW FREE BOOKLET

Shows how to get control of mold and blue stain

Du Pont "MELSAN" for blue-stain and mold control

"Melsan" Fungicide, a thoroughly tested product of Du Pont research, effectively prevents surface molds *and* blue stain in a single treatment. Specially designed for locations where seasoning conditions are severe.

Du Pont LIGNASAN® for blue-stain control

One quick dip or spray in a solution of "Lignasan" Fungicide is the effective way to protect your lumber against blue stain. Treatment costs little, pays for itself many times over. Now available in handy one-pound bags.

Du Pont Technical Service

Du Pont technical representatives are ready to assist you in your stain-control program. Their practical knowledge can help you produce more bright, clean lumber.

Full Details—ON HOW TO GET BRIGHT LUMBER

Du Pont's new booklet describes complete, step-by-step program for effective control of blue stain and mold. This year, make sure *you* get the top prices that bright, clean lumber brings.

GET YOUR COPY NOW!

E. I. du Pont de Nemours & Co. (Inc.)
Grasselli Chemicals Department
Wilmington 98, Delaware
Please send me your new booklet on stain control. ☐
Please have your technical service representative call. ☐

*Name*_____ *Firm*_____

*Street*_____

*City*_____ *State*_____

DU PONT
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BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

Hardboard - newest development in the Forest Industry

(Concluded from Page 103)

mated at one-third the total fibreboard production. Following is a tabulation indicating the annual production of hardboard in the principal producing countries of the world:

Hardboard production is estimated at one third the total fibreboard production. Following is a tabulation indicating the annual production of hardboard in the principal producing countries of the world.

	Tons
Sweden	185,000
Finland	16,500
Norway	20,900
Germany	55,000
Austria	8,500
France	10,300
Italy	25,000
U. K.	16,500
Russia	10,000
Australia	15,000
Argentina	10,500
Union of S. Africa	20,000
United States	400,000
Canada	150,000

In nearly every country it is expected that new hardboard mills will come into production in 1951. Russia is reported to be building hardboard plants of 70,000 tons capacity which will come into operation in 1951-1954.

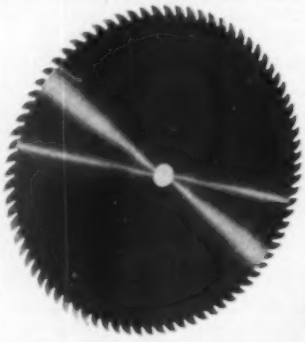
World statistics on hardboard production is given in tons. It has been calculated that one ton of hardboard is the equivalent of 2,000 sq. feet ⅛" basis. The three mills in the Pacific Northwest last year produced a total of 70,000,000 sq. feet or 35,000 tons.

Last summer Donald F. Othmer and Louis G. Ricciardi of the Polytechnic Institute of Brooklyn, N. Y., presented a paper at a wallboard conference at Cambridge, Mass., discussing at length the wallboard industry. The paper carried some estimated costs of constructing and operating a hypothetical plant of 20,000,000 sq. foot annual capacity. Costs have, of course, increased tremendously since that time, but as presented at this meeting were:

ANNUAL COSTS (OMITTING VALUES OF WOOD WASTE)

Management and Labor	$137,000
Chemicals	50,000
Supplies and Services	85,000
Depreciation ($400,000 total in 12 years at 8⅓%)	33,300
Insurance (4% of original investment)	16,000
Taxes (3% of original investment)	12,000
	$333,300
Cost of 20,000,000 sq. ft. board, per sq. ft.	1.67 cents
Selling Price of competitive boards at the factory per sq. ft., approximately	5.0 cents
Total income per year for 20,000,000 sq. ft.	$1,000,000
Gross profit (without income tax, license fee, value of waste)	
—per sq. ft.	3.33 cents
—per 1000 sq. ft.	$ 33.30
—per year	$ 666,700
Total cost of plant and machinery	$ 400,000
Depreciation at 8⅓% per year (12 years)	$ 33,000

"The above estimate," says the paper, "is as complete and high as is reasonable to avoid or to be able to cope with unforeseen factors. Furthermore, it must be considered that whereas all the price quotations are based on a present day inflationary market, the selling price chosen is based on pre-war stand-



SAW TROUBLES?

Rough Cuts?
Hard Cutting?
Chipped Edges?
Uneven Cut?
Chipped Teeth?
Maintenance Expense?

ELIMINATE THEM ALL with
CASCADE CARBIDE SAWS

IMPORTANT
Check These Facts

Extra long carbide teeth.

Precision-built for your specific use at no additional cost to you.

Full gauge, highest quality steel—tensioned to specific RPM.

RIP—TRIM—CUTOFF SAWS

IMPORTANT
RENTAL SERVICE
We rent Cascade Carbide Saws
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Cascade SAW & TOOL
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Box 179 Phone 8-4813

IMPORTANT
Check These Facts

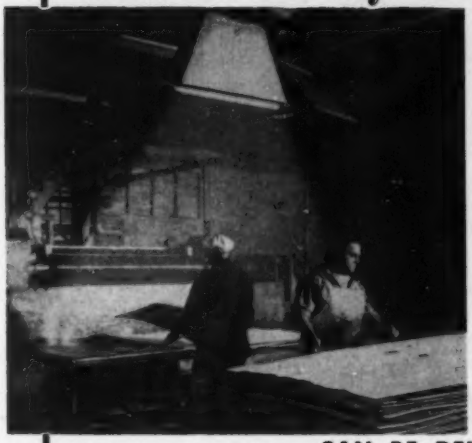
Nearly 75% of Plywood and Hardboard plants on West Coast are using Cascade Carbide Saws.

Nearly 100-times the normal use between sharpenings.

Factory located on the West Coast insures prompt delivery.

24-HOUR SHARPENING SERVICE ON ALL MAKES OF CARBIDE SAWS

Decrease Your Plywood & Veneer Waste with the SHADOW LINE GUIDE



Our Shadow Line Guide No. 2 is now widely used in the Plywood and Veneer industries:

Behind Glue spreaders for detecting off size stock.

On Fishtail trim saws and in all operations for ripping and trimming plywood and lumber to size with a minimum of waste.

- Export Dept.: Frazar & Hansen, Ltd., 301 Clay St., San Francisco 11, Calif.
- Plant: 1757 Airport Way, Seattle, Washington

CAN BE DELIVERED FROM STOCK — $125.00

MILL ENGINEERING & SUPPLY CO.

3311 FIRST AVENUE SOUTH · SEATTLE 4, WASHINGTON

COLUMBIA VENEER Co.

Manufacturers of
DOUGLAS FIR PLYWOOD

COLUMBIA

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DOUGLAS FIR VENEER

STANDARD PANEL

ALL THICKNESSES AND GRADES

★

Sales Office and Plant

COTTAGE GROVE PLYWOOD CO.

CULP CREEK
OREGON

Foreign Production of Wallboard

The following data indicating the daily capacity in square feet of wallboard plants in fourteen foreign countries, are supplied by W. R. Tayler of the United States Wallboard Machinery Company, 90 Broad St., New York City, which has designed and supplied American wallboard machinery for many overseas plants.

	Sq. Ft.
Austria*	300,000
Australia	400,000
Norway*	350,000
Finland*	1,000,000
France	300,000
Sweden*	3,500,000
Canada*	1,300,000
Italy	400,000
Belgium	100,000
Hawaii*	400,000
England	250,000
Mexico	100,000
New Zealand	200,000
South Africa	200,000

*Countries marked with an asterisk are exporters. The figure sincluded all types of wallboard, both hard and soft.

NEW WASHINGTON HOT PRESS FORMS PLASTIC-FACED PLYWOOD

Above: Press is loaded, ready to start another automatically timed and pressure-controlled cycle.

Right: View from loading side with panels being subjected to heat and pressure. Six 12" hydraulic cylinders exert total "push" of 850 tons.

Production of plastic-faced "Armoron" plywood panels was recently begun by Anacortes Veneer, Inc., Anacortes, Wash., using the new hot plate press shown above. The 850-ton press was designd and manufactured by Washington Iron Works to specifications requiring especially close tolerances, long life, and fast, automatic operation.

OTHER WASHINGTON PRODUCTS engineered for maximum production efficiency include "Trakloader," and other logging equipment, hydraulic barkers, pulp baling presses and paper dryers.

WASHINGTON IRON WORKS

Since-1882

WASHINGTON IRON WORKS

1500 6th Avenue South Seattle 4, Washington

There's No Mystery

(Concluded from Page 110)

We feel that numbers one and two have some merit worthy of consideration, but that number three is practical, and gives the best chance for overall analysis. First of all, if he is going to have a board plant he will need a laboratory anyhow to keep check on the quality of his product. He will also have to have a technologist to run this laboratory. Therefore, why not put this in first. It can be done for less than $5,000. His particular type of waste is probably different in either amount, shape of species from other mills, therefore, he should have his technologist develop a board that can be most economically produced from his mill waste. When he is convinced that he has the answer, then put in a pilot operation. This could consist of either a single or double opening press, but not necessarily for continuous operation. This press should be of a size you plan to use in full scale operation. The purpose here is two-fold: first, it gives your technologist an opportunity to iron out any difficulties he may find in changing from laboratory size board to commercial size board. Secondly, when these problems have been worked out he can start giving full scale panels to his dealers and jobbers so they can start preparing their customers for this board.

FUTURE

There isn't any individual or company that can give you an accurate picture as to the ultimate potential of the hardboard industry. Almost everybody who is familiar with the industry feels that right now hardboard is where plywood was about 25 years ago. Hardboard can be produced in dimension stock, die stock, etc. It can be used for wall paneling, core stock or overlay work. Most types can be worked with ordinary wood working tools and the fact that it can be made moisture resistant adds to its sales appeal to contractors for outside paneling or for re-usable concrete forms. The furniture and door industries are using it more and more as it becomes increasingly available. The most important point, we feel, is that he can use waste material for his source of supply and produce a variant size of product economically depending entirely upon the process he is using. It can be produced with different textures of finish and can be readily overlayed with many fine types of material. The market is limited only by the limited imaginations of his sales department.

Building Veneer Plant

Holt Lumber Co. is installing a peeling plant for manufacturing green veneer adjacent to the organization's sawmill at Creswell, Ore. According to Harry Holt, manager, the veneer plant will start production early this spring and operate on one-shift schedule. Equipment will include an electric-powered chain saw and pond-type log barker; a 60"x110" Merritt lathe bought from Wienker Machinery Co. will discharge via direct hook-up to a Victor clipper purchased from E. V. Prentice Machinery Co. This is an electric powered plant, the lathe to be driven by General Electric Amplidyne unit.

New Plywood Plant

Santa Rosa Plywood Co., Santa Rosa, Calif., recently started operations. The company is purchasing veneer, and is making about 25M sq. ft. of plywood daily in its 15,000 sq. ft. plant. At the present time it is making Douglas fir plywood, but may possibly make redwood plywood.

Head of the company is Warren Odenthal, president of the California Cabinet & Fixture Co., Berkeley, Calif., and associated with him are his brother, William, Gene Harter, and Ray Winther. Marvin Baker is superintendent of the plant.

Loggers Offer Annual Bursary

B. C. Loggers Association is now providing an annual bursary at the University of British Columbia in the name of Phil Wilson, veteran logger, who was a former chairman of the association. Phil Wilson, who retired several years ago but remains an ardent baseball fan, came to the West Coast in 1906 from Wisconsin, where his father and grandfather had engaged in sawmilling. He helped organize Wilson Logging & Timber Co. with Dan O'Brien, father of George O'Brien, vice-president of Powell River Co., and head of O'Brien Logging Co. Then he was with the Merrill, Ring & Wilson and associated enterprises.

Ponderosa Pine Lumber Co., Elgin, Ore., was sold by *Ralph L. Smith Lumber Co.* in January to a purchasing group composed of *Engler Milling Corp.*, Jersey City, N. J.; *Shell Sash & Door Co.*, St. Paul, Minn.; *W. E. Huson & Son*, New York; and *Lowe & Lundberg*, New York. *Arthur E. Engler* is president of the purchasing organization, and *W. E. Huson* is general manager under the new ownership.

The Long-Bell Lumber Co. was host for the West Coast Dry Kiln Club's annual meeting held at Longview, Wash. Mitchell Slyter, Wilson River Lumber Co. (left), re-elected president of the club for another year, receives congratulations from L. B. Thorpe, Long-Bell dry kiln foreman (right), and Lloyd Quinn (center), Oregon-American Lumber Corp., who was re-elected secretary. Following a tour of the plant, the group lunched at the Long-Bell cafeteria where J. H. Kenesson, general manager of the Longview Division, welcomed the club members. R. F. Morse, vice president in charge of logging and timber; T. E. Happenstall, chief production engineer; and Arthur Mottet, research director were introduced.

PACIFIC FOREST INDUSTRIES

Exporters of Plywood

TACOMA 2, WASH., U. S. A.

WASHINGTON BUILDING

EXPORT SALES ORGANIZATION
FOR PACIFIC NORTHWEST

Douglas Fir

PLYWOOD MANUFACTURERS

REGISTERED TRADE MARK

FIRPLY

MADE IN U. S. A.

CODES — ACME, BENTLEY, A.B.C. 6TH EDITION
CABLE ADDRESS "FIRPLY"

Plans Specialty Hardwood Project

On a visit to the New York office of The LUMBERMAN, Mr. Fred A. Curtis, veteran lumberman of the South and Midwest, announced that he planned to return to the industry after six years of retirement at Surprise, N. Y., in the Catskills. He was in the Manhattan area looking up old customers and said that he had been in conference with the New York State Conservation officials regarding use of hardwood stands in the Catskill area.

Catskill hardwoods are little used at the present time, there being no pulp mills in that region to covet the species as a "mix" for semi-chemical pulping. A pioneer in hardwood dimension stock production, Mr. Curtis plans to take his specialty several steps further than when he relinquished it six years ago. Planning for midyear of 1951, he expects to lay out an operation which will include a small sawmill for reducing bolts and flitches to rough dimensions, two 24-gauge band mills, finishing equipment units, and a Forsell drying kiln of suitable size. The Forsell kiln has been developed in Sweden, Mr. Curtis states, and is of the vacuum and steam type, consisting of a large steel cylinder covered with concrete and a hydraulic pump for drawing out moisture.

Not only does the Curtis plan call for selection of logs by size and specie but the selection of customers as well. For example, he expects to find a ski manufacturer who will take all his hickory dimension for a specific purpose; and a chair maker who would be interested in all of a certain dimension of maple or oak. Mr. Curtis claims to get at least a third more out of the tree than the old-fashioned hardwood operation and has had unusual experience in small dimension hardwood stock. Raised in the now extinct "vehicle wood material business," he was in charge of a Chicago wood parts plant which furnished Studebaker when that firm made wagons. From this phase he went into wood auto parts, then furniture and implement parts when cars transferred entirely to steel. He claims to have founded and organized the National Hickory Association, a membership of hickory users who feared the supply would run out. Two years of this work were spent in study and survey with the Forest Service and the Forest Products Laboratory.

At one time he was associated with the well known Houston brothers in a bending plant at Memphis, but they quickly found, he said, that their plant alone could bend all the top bows necessary for U. S. prairie schooners and wagons in a single day. With such efficiency and competition spelling ruin, they quickly returned to rough lumber sales. But this gave Mr. Curtis an idea and he formed the Vehicle Wood Stock Company, he told The LUMBERMAN, which consisted of 35 producers in the U. S. and 12 in Canada. For seven years he traveled for this group, marketing the products of all members. Then the Federal government inquired of the association if it was not controlling price and supply. "The answer was yes," said Mr. Curtis, as honest then as now, "so that was the end of that."

The end was in sight, anyhow, for wooden vehicles, so Mr. Curtis finally got to the business of supplying furniture factories. They need such service even more today, he avers, being unable to cut labor costs or lower the price of machinery. In some lines foreign manufacturers are outdoing the U. S. plants, and reduction of labor and time costs by ready-made parts is the answer, Mr. Curtis believes.

DRY KILN PARTS *a complete stock*

KILN TRUCKS

These dry kiln trucks are constructed from 4-in. steel channel. Wheels are mounted on steel rollers for free rolling on rails. Our 4 ft. 4 in. channel truck is equipped with 8 in. tread dia. wheels for heavy duty.

TRUCK WHEEL

High carbon cast steel wheels are standard either 7 in. or 8 in. diameter tread with thick flanges and backing below the thread to prevent spreading and to give long life. Wheels are equipped with lubricant fittings.

WE MAINTAIN OR CAN MANUFACTURE A COMPLETE STOCK OF DRY KILN PARTS FOR YOUR DRY KILN

- Fittings
- Door Carriers
- Door Carrier Parts
- Control Valves
- Roof Vents
- Motors
- Kiln Paints
- Pedestals
- Moisture Meters
- Traps
- Bearings
- Desuperheater Spray
- Spikes, Belts, Clips

If you have a parts problem write Dept. L-3 for complete information.

OFFICES AND WAREHOUSES IN
SAN FRANCISCO, CALIFORNIA
LOS ANGELES, CALIFORNIA
HONOLULU, HAWAII - MANILA, P. P.
VANCOUVER, BRITISH COLUMBIA

C. M. LOVSTED & CO., INC.
ENGINEERS AND MANUFACTURERS
4000 W. MARGINAL WAY - SEATTLE 6, WASH.
PHONE AValon 4000

Plywood Sheathing

(Continued from Page 93)

made through a Reeves variable speed drive.

American-Marietta cold-press no-clamp glue is applied to the veneer by a steel-roll glue spreader and the laid-up veneer converted into plywood panels in a cold press. This press takes a 7′ package of 4x8′ panels, the entire charge moving into the press as a unit.

After the plywood sheathing panels are trimmed to finished size by skinner and cut-off saws, they receive final processing in the filler section of the plant.

The sheathing uses a "C" grade face, which allows knot holes not larger than 1″, and "D" veneer on back side, allowing knot holes not larger than 2½″. At the Valley plant, even the allowable holes of face veneer are filled as are the large holes on backside. Voids along edges of the panels are also filled.

Steam for operating the veneer dryer is provided by one of the new integral-furnace oil-burning boilers operating at 240 p.s.i. and having a capacity of 26,500 lbs. per hour.

Nineteen Fifty

(Concluded from Page 70)

plans for such plants are Anacortes Veneer, Inc., Cascades Plywood Corp., Portland, Ore.; Coos Bay Lumber Co., Coos Bay, Ore.; and Shasta Plywood, Inc., Reading, Cal. (subsidiary, United State Plywood Corp.).

Year Ahead

Perhaps the most significant feature of the past year's developments within the industry is the manner in which the manufacturers have demonstrated their ability to adapt quickly to changing conditions and shifting markets. The year ahead promises to be an eventful one. The production achievements of 1950, new plants under construction, the interest in new products to meet new demands and the manufacturers' continuing program of research and testing constitute conclusive evidence that the industry is determined to do its utmost to meet whatever demands may be made upon it in the months ahead.

The Winlock Handle Co. plant at Springfield, Ore., was completely destroyed by fire in mid November. Estimated loss totaled $200,000, including a $50,000 inventory. *T. T. Leonard*, a partner owner, has announced that the plant will be rebuilt in the near future and will have the same capacity (40,000 handles per day).

NEW EDERER BARKER

★SAVES CHUCKING TIME
★REMOVES BARK ONLY
★BARKS LOGS OF ALMOST ANY CONTOUR

★ EDERER Custom-Built Equipment—Engineered and Manufactured to Job Requirements of the Plywood Industry

Like other EDERER plywood mill equipment, this new barker is custom-built to the exact requirements of the job—engineered for speed, efficiency and economy. New air chuck reduces chucking time 90 percent over standard screw-type chucks; no slabbing when releasing log. The scraper head arm is extra wide, all-welded heavy steel construction. Blade is adjustable to compensate for peeler log taper and it will bark logs of almost any contour and removes only bark. An EDERER engineer will be glad to give you full information about the EDERER barker.

50th ANNIVERSARY YEAR
EDERER
ENGINEERING COMPANY
2931 FIRST AVE. SO. SEATTLE 4, WASH.

EXPORT AGENTS: Frazer & Hanson, Ltd
301 Clay Street, San Francisco 11, Calif.

166851

OVERHEAD CRANES • GRAPPLES • MONORAILS • LATHE CHARGERS • PRESSES

Sawmill of B. C. Manufacturing Co., New Westminster, B.C. Planing and cedar siding mills, to the right, are not fully shown.

FOUR PLANTS IN ONE

BRITISH COLUMBIA MANUFACTURING CO., LTD., NEW WESTMINSTER, B.C., HAS DEVELOPED ONE OF THE MOST UNIQUE INTEGRATED FOREST INDUSTRIES IN AMERICA.

A pioneer Canadian west coast lumber organization celebrated its golden anniversary last year simply by sawing wood and continuing its program of modernization and diversification.

British Columbia Manufacturing Co., Ltd., employing 350 men, is really four plants in one—a sawmill, a planing mill, cedar siding mill and woodworking plant. It wasn't always so versatile as it is today, but in one way or another the company has been in the lumber business at Queensborough, Lulu Island, in the city of New Westminster, B.C., since the spring of 1900. For many years it pioneered in the production and marketing of kiln dried hemlock.

To give an idea of the mill's variety in production, here are some of the main lines: Bungalow and bevel cedar siding attractively "packaged" with lithographed end wraps on the bundle and smooth-trimmed to exact length; selected common green cedar bungalow siding, cedar barn siding and flooring, cedar finish, gothic-pointed pickets, shiplap and boards, Linderman jointed furniture and luggage stock.

Manufacturing and shipping of kiln dried lumber have been one of the company's specialties for many years. Company records show that the first kilns were built in 1913—a far cry, however, from today's battery of 14 Moore cross-circulation kilns, the first of which went into use in the mid-30's.

The first company in the province to merchandise dried hemlock, the mill cut 90 percent hemlock during the first 40 years of operation. Today, however, the mill actually handles nothing but cedar. Average mill cut is about 100,000 board feet of lumber per shift, and a continuous double shift basis has been maintained for many years.

A Perpetual Operation

B.C. Manufacturing Co. consumes about 45,000,000 feet of logs a year and while its principal supply is

R. L. Cliff, president.

Harold A. Renwick, vice-pres. and general manager.

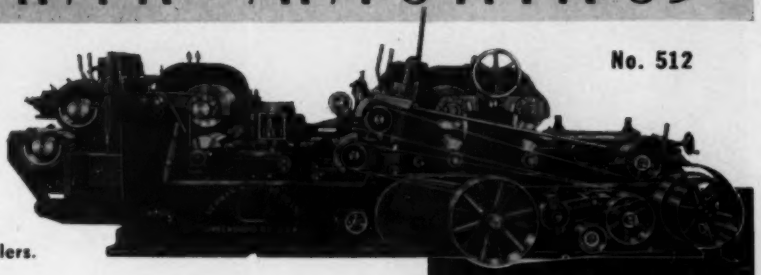
Robert S. McDonald, managing director.

Ian N. McDonald, sales manager.

NEWMAN MACHINES

Newman

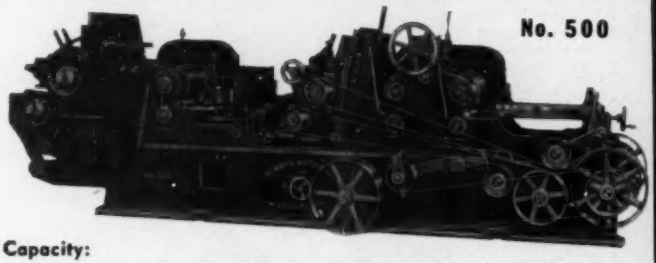
No. 512



Capacity: 16" and 24" wide, 8" thick.
Speeds up to 325 feet per minute.
8" dia. cutting circle.
Six 12" dia. feed rolls.
Single and double profilers.

BALL and ROLLER BEARING PLANERS AND MATCHERS

No. 500



Capacity:
14" and 24" wide, 6" thick. Speeds 40 to 200 feet per minute. 7" cutting circle. Six alloy steel feed rolls. High carbon special alloy steel cylinders. Single or double profilers.

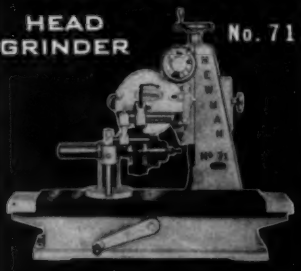
ORDER NOW FOR EARLY DELIVERY

Ball and Roller Bearings

ALL NEWMAN cylinders or heads are DYNETRICALLY BALANCED insuring an accurate and superbly finished product.

The ball bearing NEWMAN 71 (shown below) will grind all sizes of cutter heads. Table is 33" long by 9" wide with horizontal travel of 25" and is heavily ribbed to maintain accuracy over entire travel. Maximum cutter head swing is 11".

HEAD GRINDER No. 71



No. 55 AUTOMATIC PINEAPPLE FEED TABLE

The NEWMAN 55 feeds stock automatically to high speed planers and matchers up to 450 lineal feet per minute. Capacity: 30" wide, 8" thick. All adjustments and controls are centrally and conveniently located.

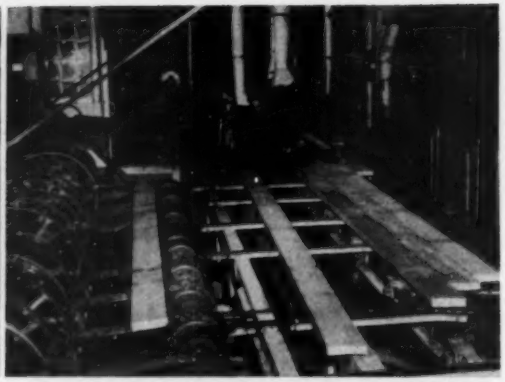
No. 8-B PLANER, MATCHER AND MOLDER

The NEWMAN 8-B planes 22" wide and 8" thick, joints 4" thick and will match 14" wide. 6" diameter feed rolls. Speeds of 30, 50 and 75 feet per minute.

Unsurpassed for work in small and medium mills

MAY WE SEND YOU FULL DETAILS?

NEWMAN MACHINE COMPANY, INC.
GREENSBORO, NORTH CAROLINA, U.S.A.



Top, left: Cedar log brought to the sawmill by vertical lift passes the circular saw head rig.

Top, right: Durand trimmer and Stetson-Ross planer.

Right: Lumber rack in the cedar siding mill showing racking and bundling practice.

Salmon River Logging Co. on the east coast of Vancouver Island, whose opretaions were described in The LUMBERMAN in May, 1950, it has been necessary to supplement this from other sources. Last December, Salmon River Logging Co. signed a forest management license with the B.C. government under the terms of which in excess of 40 million feet per annum may be cut in perpetuity in one of the finest reproducing stands on Vancouver Island. This, along with other timber and logging interests controlled by the group, puts the company in an enviable position in this respect. B.C. Manufacturing Co. is affiliated with Westminster Shook Mills Ltd. and Maple Ridge Lumber Co. Ltd. of Haney, all three of which combine in the ownership of Salmon River Logging Co.

R. L. Cliff is president of all these companies. Harold A. Renwick is vice-president of the parent company and secretary-treasurer of the other mill companies. In the B.C. Manufacturing Co. R. S. McDonald is managing director; R. G. McDonald director; Ian W. McDonald sales manager; S. W. Laidman general superintendent, and Eric Detchon accountant.

Bill Craig is mill foreman, with his brother Charlie Craig night shift foreman. Both have been with the company ever since they started sawmilling 25 years ago. Planing mill and cedar mill foreman is Cameron Ritchie; manufacturing plant foreman Ken Holbech; chief engineer Henry H. Wright. Bud Yates is shipper; Orville Douglas, chief sawyer of the day shift, has been with the company 16 years, and Pete Archdeacon, head filer, is a veteran of 28 years of service.

Most of the company's expansion during the past year or two has been in the development of the planing mill and cedar siding mill, the latter having been completed in 1948 and the former in 1949. During 1950 the sawmill was revamped, with extensive additions to the trimming and edging and green chain facilities.

Both the cedar siding and planing mills were designed and built under the supervision of General Superintendent Laidman, who took over that position in 1947 following the death of Earl Cruver. Laidman has been with the organization since 1924.

In the main sawmill, logs are taken out of the water of the Fraser River by vertical lift and put through a circular head rig, followed by a Heaps 42″ edger which cuts 11 inch cants. Other mill equipment includes a Heaps 8 x 30″ pony edger, Prescott 7′ 6-roll band resaw, and a Prescott 14″ shotgun feed, and Prescott electric setworks. The main mill is steam driven. The company generates 450 h.p. with a Bellis & Morcom unit.

Modern Planing Mill

The new planing mill is regarded as one of the most modern in the country. Its equipment includes a Stetson-Ross model 6-12-A1 planer and matcher, a 12 knife, all-electric, ball-bearing machine with built-in profiler. The feedworks of this machine are operated in an oil-tight compartment, where clean lubricating oil is propelled to all parts of the drive, avoiding the risk of neglected lubrication, dirt and chips and cutting cost of maintenance. Push button setting of the top infeed and outfeed rolls and top cutting units is provided, and when changing from one size of stock to another electric hoists perform the function instantly without manual cranking.

Quick-change "cartridge" profile units are also used on this matcher, enabling the operative to do all knife setup work, grinding, finish jointing and pattern testing while the matcher is running on other stock. These cartridge units have self-contained ball bearings and slide into the machine as a unit, ready to produce. The cartridge profilers can be stored intact without losing the joint, and so, setup once done is not lost with each pattern change. There are also seven Irvington trimmers in the mill.

In its cedar siding operation a Linderman jointer is effectively used for the production of furniture and luggage stock.

For driving the planer and feed table there is a unit unique in Canada and quite new in the United States, a 60 horsepower Louis-Allis (Milwaukee) variable speed atlernating current motor regulated by the turn of a dial. A calibrated indicator shows the rate of feed in feet per minute. A variable speed drive is also used on the trimmer so that the feeding speed of the trimmer can be synchronized with the speed of the planer to maintain continuous, uninterrupted production.

A specially designed Durand random length trimmer which trims to exact odd and even feet is a feature in the planer mill. Ahead of it is set a Stetson-Ross 604E four-arm tilting unloader hoist requiring only one feeder to break down lumber loads to the fastest planer speeds (650′ per minute).

Although B.C. Manufacturing Co., when the plant was visited recently by The LUMBERMAN, was shipping about 30 percent to the domestic Canadian market and a large proportion to the U.S. by rail, it has been traditionally active in the overseas export field.

The company was originally organized by a group of bankers and manufacturers of North Dakota and Tacoma, in association with Mrs. Henry Eckert of New Westminster, P. D. Roe of Port Moody joining them in 1901. Financial difficulties pursued the company, however, and it went into voluntary liquidation. Not until 1913, when McDonald and Cliff took over, did the company get solidly on its feet. A visit to Australia in 1922 by these two men resulted in the development of a box shook market there that made B.C. Manufacturing Co. the largest individual supplier to that country. Expansion continued when the company recognized the importance of kiln drying and installed equipment accordingly to meet the requirements of such distant markets as South Africa, Peru and Iraq. The company adopted Moore cross circulation kilns entirely during the mid-30's, and has now started construction of a new battery of Moore kilns which when completed will maintain the position of B.C. Manufacturing Co. and Westminster Shook Mills in kiln drying.

Michigan Discourages Cutting of Immature Trees

Michigan's conservation department's forestry division is turning down an increasing number of requests to cut immature trees in state forests.

To realize the greatest value from a woodlot, department foresters offer some suggestions.

Do not cut young trees, which are entering the maximum growth period, for pulpwood or other commercial products.

Discourage "high grading." Do not permit the cutting of only trees of top quality and value but remove poor quality timber and less desirable species along with better trees.

Perpetuate the timber stand by not cutting any more than the accumulated growth and leave thrifty growing stock.

Prohibit cattle grazing in the woodlot to aid tree reproduction.

Do not arbitrarily cut all trees above a certain diameter, although cutting to a diameter limit is not too serious if the minimum limit is not too small.

Further information on desirable cutting practices can be secured by contacting the local district or farm forester or by writing to the department's forestry division, Lansing.

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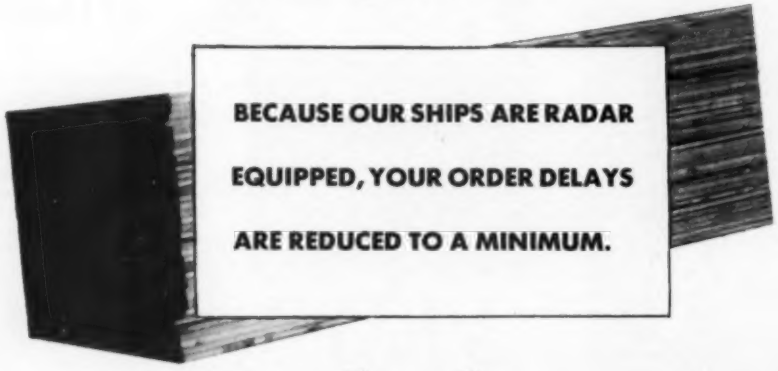

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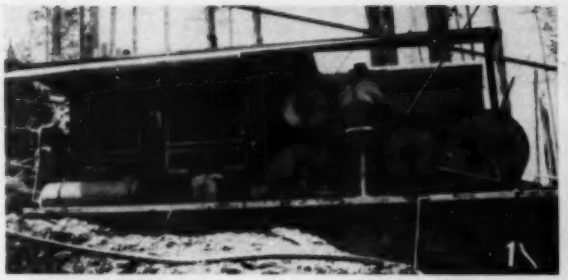
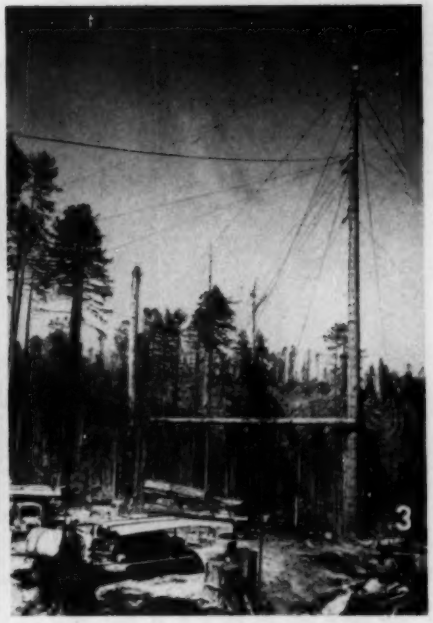




1. New Washington Iron Works, four drum yarder, owned and operated by the Arcata Redwood Co., Arcata, Calif., and working at Orick, some 50 miles north of the mill, just off the Redwood highway. The Washington yarder was purchased from the Fred E. Barnett Co., Eureka. It is powered with two 275 hp Cummins supercharged diesel engines, which drive through Twin Disc Torque converters. 2. Lower left shows a Ford truck being loaded with a big redwood log. 3. At right is seen the Washington diesel powered loader, and lower center the Washington twin diesel powered yarder. Both are powered with Cummins engines, and are equipped with Twin Disc torque converters. Note large amount of wire rope used in this operation.

QUICK TO ADOPT MODERN METHODS AND EQUIPMENT

Although the Arcata Redwood Company, Arcata, California, is one of the old, established redwood lumber manufacturing companies, there is nothing slow about its readiness to adopt modern methods and equipment in its logging and sawmilling operations.

The company has been logging at Orick, some 35 miles up the Redwood Highway from Arcata, and is running two sides under Harry Wier, logging superintendent. One side is a tractor side using two "Cat" D8s, and an Allis-Chalmers HD19. They also were operating a yarding side, using a new four drum Washington Iron Works yarder, purchased from the Fred E. Barnett Co., Eureka. The Washington yarder has air controls, and is powered with two 275 hp supercharged Cummins diesel engines working through Twin Disc Torque Converters. The yarder has air friction, and is two speed. On the drums are 1,600′ of main line, 1½: 3500′ of ⅞″ haulback line; and 3,500′ of ½″ strawline.

Loading on both sides is done with Washington Iron Works loaders with diesel, each powered with a 200 hp Cummins engine driving through Twin Disc Torque Converters.

The short stretch of private road that leads from the spar pole to the highway is wide, heavily rocked, well drained and graded. The haul to the mill is done by gyppo haulers using various makes of trucks.

From its two sides the company logs from 135 M′ to 160 M′ per day.

The company operates altogether four tractors, three blades with a set of double drums. They build their own roads, furnishing rock with their own one-half yard shovel and trucks. They have a Galion road maintainer for keeping them in shape.

The company maintains logging headquarters at Valley Green where they have very good accommodations for their men where they have completed a number of new homes for their employees.

New Sawmill for Ontario

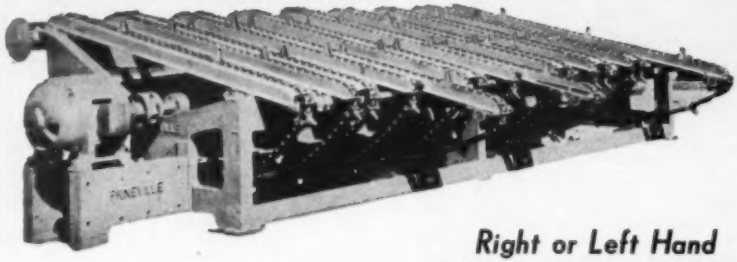
LongLac Pulp & Paper Co., at Terrace Bay, Ont., Canadian subsidiary of Kimberly-Clark Corp., has decided to proceed with construction of a sawmill costing $200,000 to utilize the sawlog size timber produced from the company's integrated woods operations.

Decision to build the sawmill, which will be the largest in that part of Canada, was reached only after careful study had shown that there is sufficient saw timber of proper species and size on the assigned limits to support continuing operations.

Gordon G. Cosens of Kimberly-Clark Corp. of Canada and Allan F. Buell, manager of LongLac woodlands, are administrators of the new venture, which was worked out in detail with officials of the Ontario department of lands and forests.

LongLac's pulp mill, which went into production two years ago, has a capacity of 300 tons of bleached sulfate pulp.

PRINEVILLE AIR LIFT Multiple Saw



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SIERRA-CASCADE LOGGERS

CONSIDER THEIR WARTIME RESPONSIBILITIES AT SECOND ANNUAL CONFERENCE ATTENDED BY MORE THAN EIGHT HUNDRED DELEGATES

NEW OFFICERS OF THE SIERRA-CASCADE LOGGING CONFERENCE —L to R—Herbert McMahan, Ralph I. Smith Lumber Co., Anderson, Calif., president; Robert Grimmett, Pine Logging Co., Fresno, Calif., outgoing president; James Garrett, Collins Pine Co., Chester, vice-president; and Jack S. Berry, Sacramento, re-elected secretary-treasurer.

A delicate balance between unlimited possibilities and heavy responsibilities was outlined to 800 loggers and logging machinery and equipment men, delegates to the second annual Sierra-Cascade Logging Conference, Feb. 8-10, Redding, Calif., as the sessions opened with a four man panel representing several different approaches to the logging industry, and speaking on: "A Look at the Ledger."

DeWitt "Swede" Nelson, California state forester; and Clare W. Hendee, U.S. Forest Service Regional Forester, concentrated on timber conservation problems, while Earl Lee Kelly, Bank of America; and Walter S. Johnson, American Box Corp., discussed the general economic conditions of the country and the logging industry outlook in particular.

Nelson said progress in conservation had been made to the point where "today, the logger is looking at the forest and not just at the trees; he is looking at the trees for tomorrow as well as the logs for today. It all adds up to more timber, more jobs, more profit."

He reduced the present California forest practice rules to their simplest terms: (1) Minimum diameters. (2) Save young growth. (3) Prevent fire. (4) Suppress fire, and said these rules committeed the industry to a program of sound logging practices to assure a continuous production of lumber.

"We have more to fear from a breakdown in our national economy than we have from any enemy invasion," said Walter S. Johnson.

He warned of the growing danger of inflation and said that "we as lumbermen must cease adding fuel to the flame by seeking all the price that a lumber-hungry buying public is willing to pay for our products."

Johnson urged the group to strengthen their assocations so that they would have a voice in Washington, D.C. to help urge economy in all non-defense spending.

Earl Lee Kelly forecast that 14 million new homes would be built in this country by 1960 and that lumber would be the main product used in them.

Clare W. Hendee pointed out that the California net stand was about 77 billion feet of federal owned timber and 45.5 billion feet of privately owned timber. In 1946 there was an annual cut of about 2370 million feet, but by 1950 there was a cut of 2750 feet or a 16% increase in cut.

Following these talks informal discussions, Riggers' Roundtable, "a giant bull session, sparked by a general panel of loggers, foresters, equipment men and their associates got under way, sparked by Bill Berry, program chairman, and Bullcook, and aided and abetted by Bill Schofield, California Forest Protective Association as Bullwhacker, complete with red cap, mustache, and bull hook.

"CAN WE BALANCE OUR BOOKS AND OUR FORESTS With Present Problems of Timber Supply?" was the question before the Riggers Round Table, with George S. James, U.S. Forest Service, acting as Hostler.

It was brought out that all operators must see that every acre of land is producing its potential, with the utilization of other species beside pine, such as red and white fir.

Charles Gray, Stockton Box Co., pointed out that increased government demand for lumber during the

Left to right: Demonstrating Berger air tongs on a Northwest shovel powered with Cummins diesel. Partial view of the equipment exhibit; "Cat" D8 equipped with roll-out hook developed by Henry Ghiglieri and Bud Hodges, J. T. McDonald Logging Co. The roll-out hook was the subject of much discussion at the conference.

Left to right: Charles Matkin, Feather River Pine Mills; Ben Scott, Fred E. Barnett Co., a member of the equipment committee; and Fred E. Barnett; Gerald Frink, Washington Iron Works; Paul Bossee, and W. S. Price, Cal-Ida Lumber Co., and Ralph M. Singer, Trinity County Timber Co., C. R. Sigforth, Oregon-Creek Lbr. Co., H. J. Goff, Stockton Box Co., and E. E. Firestone, Firestone Lumber Industries.

Left to right: Carl Walker, Feather River Pine Mills; Bill Berry, California Foresteering, and chairman of the program committee, Bull Cook; A. J. Maunder, Quincy Lumber Co.; E. M. Young, Firestone Tire & Rubber Co.; Thornton R. Lee, Calvada Lumber Co.; Joe Zucconi, Twain Lumber Co.; O. B. Brown, Quincy Lumber Co.; Myron E. Krueger, University of California; L. L. "Doc" Simpson, Southern Oregon Conservation & Tree Farm Association; Clare W. Hendee, USFS Regional Forester.

Left to right: C. B. Goodrich and R. E. Barrington, Sierraville Lumber Co., Jim Kaiser, Glenco Forest Products, and H. C. Setzer, Setzer Forest Products, R. A. Obenland, and T. R. Elder, McCloud River Lumber Co., John Reiser, Redding Oil Co. (General Petroleum Corp. distributors), and member of the equipment committee and chief barbecue chef; Ray Lowry, Sierra Tractor & Equip. Co., Gerald Currier, Oak Creek Lumber Co., Flagstaff, Ariz.

emergency would probably be balanced by cut backs in private housing.

Paul Keen, Bureau of Entomology, Department of Agriculture, stated that bug loss was comparatively low in California, about 300,000,000 in 1950. This was the total gross, not allowing for salvage.

When the talk veered around to reaching timber in inaccessible areas, Fred Pleuss, Mack-International Motor Truck Corp., was called on and he stated that their equipment could haul 8M' up at least a 12% grade, using a 300 hp engine. It was brought out that the Forest Service maximum favorable grade was 5 or 6% and the adverse a little less.

Forest service officials stated they didn't want to over cut on lands that are now accessible, but rather wanted to open up new timber lands.

Art Alexander, Hyster Co., told of a logging operation he visited where the loggers were using a "Cat" DW10 with a skidding pan to bring loads to logs down a 33% grade.

When it came time to discuss salvage logging, the operations of the Winton Lumber Co., Martell, Calif., were described where they put a portable sawmill in the woods. (See The LUMBERMAN, November 1950.)

The next Riggers Round Table discussion was on "CAN WE BALANCE OUR BOOKS AND OUR FORESTS WITH GOOD FOREST PRACTICES," and Carl A. Walker, Feather River Pine Mills, was the Hostler. Walker brought out the points that snags very often will yield enough lumber to pay for taking them out, and they wouldn't have discovered this if it hadn't been for the California Forest Practice Rules. He said that they had found that they saved in rigging, and other costs by avoiding young growth. In other words good forest practices pay off in dollars and cents.

It was brought out that there was less damage to young growth when skidding tractors are equipped with roll-out hooks, such as developed by Henry Ghiglieri, and Bud Hodges of the J. T. McDonald Logging Co., Anderson, rather than with 'dozers. It was pointed out that there is less wear and tear on a skidding tractor if it isn't used every day with a 'dozer.

Ghiglieri said that they had been using roll-out hooks for the past 10 years, and they speeded up production. Choker setters don't need shovels to dig under a log, the roll-out hook just boosts the log up, so the choker setter can easily set the choker.

There was some discussion as to who should direct operations of the skidding tractor—the tractor skinner or the choker setter. Most seemed to feel that the choker setter should have full control as to where he wanted the tractors to go, but this discussion finally boiled down to the point where it was decided that the final responsibility boiled down to the side rod.

John Parmeter, Trinity Alps Lumber Co., said that they had had a card printed with the condensed forest practices rules and they gave them to each new man to read. Then Parmeter goes around once in a while and gives the loggers a little quiz to see if they have read them.

A method of burning snags was described, which gets rid of each

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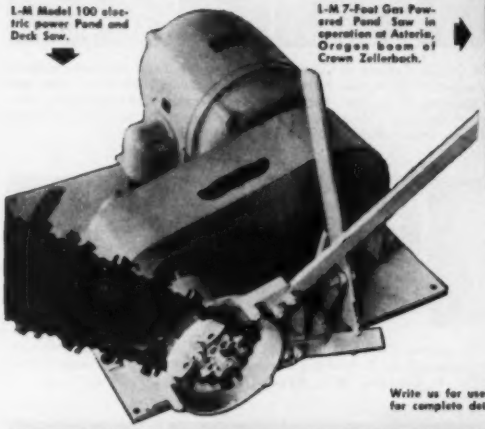
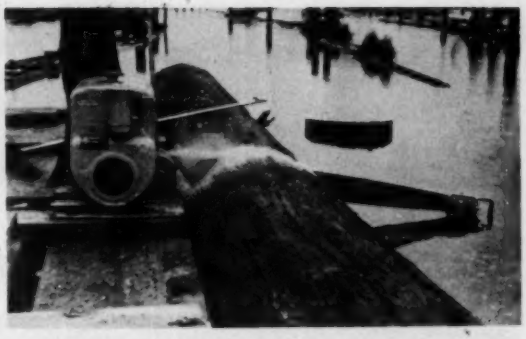


L-M 7-Foot Gas Powered Pond Saw in operation at Astoria, Oregon boom of Crown Zellerbach.



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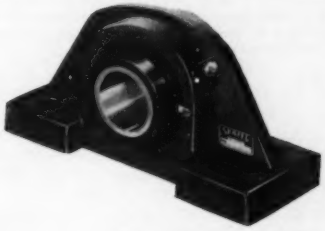

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Left to right: Roy Legge, International Harvester, motor truck division; Bill Crowe, Sullivan & Crowe, Redding International Harvester dealers, and member of the equipment committee; Fred Pieuss, member of the equipment committee, Mack International Motor Truck Corp., and Russ Jamison and L. B. Stewart, also with Mack; A. Whisnant, Pacific Logging Congress; J. H. Hart, Hart Motor Co., member of the equipment committee; Fred Torr, Sierra Tractor & Equipment Co. and one of the founders of the Sierra-Cascade Logging Conference; N. E. "Ed" Gurney, Sierra Tractor & Equipment Co., and chairman of the equipment committee; Walter S. Johnson, American Box Corp.

Left to right: Henry S. Pimental, Carl D. Marshall, Henry S. Pimental & Son Lumber Co., J. C. Fowler, Cottonwood Lumber Co., Cottonwood, Calif., Lester Libbee, Buford Hodges of J. T. McDonald Logging Co., S. C. Linebaugh, S. C. Linebaugh Logging, White Pines; and Harry B. Oatman, Trinity Alps Lumber Co., D. Williams and T. H. Batchelor, U. S. Plywood Corp.

Left to right: Lewis Hayes, Loveness Logging Co.; John Parmeter, Jr., John Parmeter, Sr., Trinity Alps Lumber Co.; Louis J. Little and Robert E. Starrs, also with Trinity Alps Lbr.; K. W. Bass, Taylor & Rondrup Loging Co.; T. R. McGovern, State Compensation Insurance Fund; C. W. Rondrup, Taylor & Rondrup Logging Co.; and Bill Hart, State Compensation Insurance Fund.

snag at a cost of 15 or 20¢ per snag. This is to chop a hole in the snag, and fill the hole with a mixture of planer shavings and diesel oil, and then firing this mixture.

Art Roark, E. C. Atkins Co., told of how the Diamond Match Co. falls snags with an electric chain saw at small cost.

The next Riggers Round Table proposed the question: *"Can We Balance Our Books and Our Forests with New Machinery and Methods?"* and Prof. Myron E. Krueger, University of California, was the Hostler. In firing up Krueger said that we must have men in the logging industry to adapt the use of machines to the problem of keeping the woods productive. He said that there was nothing wrong with the use of any equipment in connection with good forestry, and pointed out that high lead donkey logging had been used in many instances with little damage to young growth.

He said he thought that perhaps it was best to skid in tree length logs and buck at the landing, thus saving the residual stand and making for uniform bucking.

This aroused quite a debate, some loggers holding that tree length logs fanned out more than shorter logs, thus destroying young growth.

Mel McGrew, McGrew Bros., Medford, said that they had been bringing in long logs, and bucked them on a level spot, first knocking off the bark where they were to be bucked to save the teeth in the saw.

Stan Keesy, Diamond Match Co., said that they had skidded in tree length logs some years ago, and bucked them at the landing but they had had a hard time keeping the saws sharp on account of dirt.

Self propelled loaders came in for discussion, with all hands agreeing that they have proved most satisfactory for fast loading. J. T. McDonald Logging Co. has used a Northwest shovel for loading and sorting and it has done a fine job, it was said.

As the discussion veered around to log weights on trucks, various devices were described, such as a scale for weighing logs on the boom of a shovel. The shovel operator can see the scale and knows just

Left to right: Lynn Burnett, Winton Lumber Co., L. K. Spade, Spade & Hays Logging, Arthur L. Coggins, Shasta-Trinity Lbr. Co.; Cecil Wetsel and Orme Felmley, Wetsel-Oviatt Lbr. Co.

how much he's putting on each truck.

New Officers

The final session opened with the announcement of new officers—Herb McMahan, Ralph L. Smith Lumber Co., Anderson, Calif., president; Jim Garrett, Collins Pine Co., Chester, Calif., vice-president; and Jack Berry, Sacramento, re-elected secretary-treasurer.

New directors elected include Cal Setzer, Setzer Forest Products, Sacramento; Carl Walker, Feather River Pine Mills, Feather Falls; Ed Mason, Diamond Match Co., Stirling City; L. Stevens, Weyerhaeuser Timber Co., Klamath Falls; and Art Herring, Castle Creek Lumber Co., Castella.

Followed then the final session of the Riggers' Round Table, with L. L. Simpson, Southern Oregon Conservation & Tree Farm Association pinch hitting as Hostler for George L. Flanagan, Elk Lumber Co., who was unable to be present. The topic was *"Can We Balance Our Books and Our Forests with New Machinery and Methods?"*

Simpson pointed out that lighter machines and equipment would undoubtedly save lots of young growth, but also that it was getting increasingly hard to get parts for existing equipment right now.

Bob Grimmett said that he counted on the resourcefulness of loggers and sawmill operators to overcome many of the shortages in parts.

The discussion then switched over to power saws, and Gordon McCulloch, McCulloch Motors Corp., said that there is a problem of fires being started with power saws but that the muffler put on power saws was efficient, and if the fallers would leave the mufflers on, which only weigh a few ounces, the fire danger would be eliminated.

Henry Leavitt, Leavitt Power Tool Co., Sacramento, said that they had put in a stock of small fire extinguishers, which weighed only a few ounces and were not much bigger than a wrench, but the fallers hadn't taken to them. He thought logging bosses should insist that fallers should have such a small fire extinguisher in their tool boxes.

Libbee of the J. T. McDonald Logging Co. told of a set of fallers who had a two man chain saw for falling and a one man chain saw for limbing and marking. While one faller is doing this, the other faller is bucking with the larger saw.

Under new developments in the field of logging, the pre-loading system of the Ivory Pine Co., Dinuba, Calif., was described. (See The LUMBERMAN, November, 1949 for complete, illustrated description.)

During the conference there were many social events. The equipment people were hosts at numerous cocktail parties, and there was a dinner dance attended by about 400. Final social event was a barbecue, the steaks for which were donated by the equipment peop'e.

Machinery Show

The machinery show which went along with the conference was one of the best on record, and E. N. "Ed" Gurney, chairman of the equipment committee, Sierra Tractor & Equipment Co., estimated that at least $750,000 worth of equipment was on view.

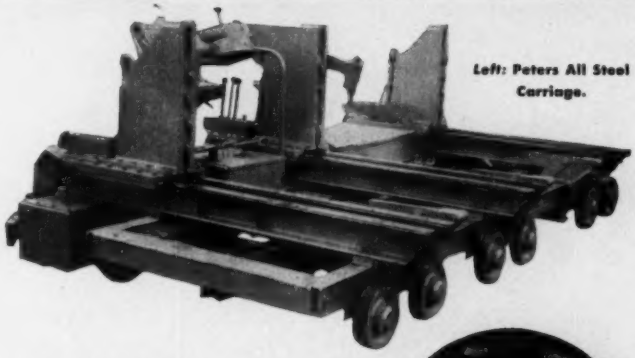
Among the exhibits were Trailmobile trailers; Walters trucks and Austin Western grader; Mack trucks; GMC trucks; White tucks; Kenworth trucks; Allis-Chalmers tractors; GMC trucks, Carco arches; Fruehauf trailers; International Harvester trucks and tractors; Autocar trucks; Utility trailers; Peterbilt trucks; Wentworth & Irwin trailers; Caterpillar tractors and Hyster winches and arches; Bucyrus-Erie 'dozers; a Be-Ge hydraulic log turner; a Berger air tong on the boom of a Northwest shovel powered with a Cummins diesel engine.

Wynn's friction proof oil; GE motors, Bethlehem wire rope, Skookum blocks, Simonds saws, Diaston power saws, Dodge bearings, and Chain Belt; Homelite power saws; Pacific Marine pumpers, and other fire fighting tools.

McCulloch chain saws; Ashland edger; Clark Tire Carriers; Tiger Brand wire rope, Carco high stake bunk, and pictures of Washington Iron Works equipment.

Alemite lubrication systems; Goodyear tires; Shell Oil Co.; Young Clocks and Tools; "Caterpillar;" GM and Petters diesel engines. Titan Chain Saws, Firestone Tires, GE Radio Telephone; Olivetti printing calculator.

TCC dual drive axles; Stetson-Ross Machine



Left: **Peters All Steel Carriage.**

MAXIMUM RETURN ON YOUR INVESTMENT with a PETERS Carriage

Because

Above: Peters Predetermined Automatic Set Works.

Note the efficient arrangement of controls at operator's fingertips. Speed and accuracy is the keynote with one-man operation.

1. SPEED: With a Peters Carriage Saw more board feet per man hour due to split-second positive log turning and setting and lightning sprint on return.

2. ACCURACY: Fraction-accurate Peters Automatic Set Works assures more board feet per log, with a greater percentage of cut in higher grades.

3. LOWER MAINTENANCE COST: PETERS all steel construction, with air or hydraulic power, saves dollars by the peck.

4. ONE-MAN OPERATION: Means less overhead per board feet cut.

RESULT: Peters assures you of a greater return on your carriage investment.

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WORLD BESTOS RED BLOCK "J" Combination

Stops Brake Fade! Saves Drums - Gives More Mileage - Better Performance

Just a year ago World Bestos announced sensational new RED BLOCK . . . a high friction brake block combination for heavy duty trucks and trailers *guaranteed to eliminate brake fade* regardless of load, heat, water or abusive driving conditions.

Response from the trucking industry has been tremendous. Fleet operators in all parts of the country have equipped their rigs with RED BLOCK . . . have proved for themselves that RED BLOCK *can't fade* even under the most severe operating conditions.

Proved also that RED BLOCK ends glazing and heat checking of drums . . . gives vastly improved brake performance, gives longer brake life and assures lower operating costs.

Operators and maintenance men quoted at right serve some of the nation's finest fleets. Read what they have to say . . . see how RED BLOCK solves the trucker's toughest brake problems!

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WB

can't fade!

Guaranteed WORLD BESTOS RED BLOCK

Can't Fade—Actually Retains Full Friction at Brake Temperatures as High as 1300°

Red Block is used only in combination with World Bestos "D" blocks as shown in diagram. This makes up the revolutionary "J" Combination that eliminates brake fade regardless of heat, water or driving conditions.

On severe service "J" Combination also gives *longer mileage* and protects drums from heat checking and distortion.

THE RED BLOCK "J" COMBINATION IS AN EXCLUSIVE WORLD BESTOS DEVELOPMENT. GUARANTEED *NO FADE* (HEAT OR WATER)

Mr. Harold P. Collier . . . owner of Collier's Truck Service, Uniontown, Pa., says, "Since we started using World Bestos RED BLOCK we haven't had a single case of brake fade and are getting *twice the mileage* between relines. RED BLOCK in the "J" Combination is without doubt the finest brake block I have ever used."

Mr. Bill Strang, Fleet Supt., Associated Lumber and Box Co., Wilseyville, Calif., "We have had unusual success with World Bestos "J" Combination (RED BLOCK) . . . no trouble at all with brake fade . . . a welcome saving on maintenance costs due to longer brake life and reduced drum wear."

Mr. M. H. Wilson, Supt. of Mtn., Pilot Freight Carriers, Inc., Winston Salem, N. C., "Most dependable braking performance we've ever experienced. (RED BLOCK) has eliminated brake fade completely . . reduced our brake maintenance costs substantially by giving us more mileage between relines and by eliminating excessive drum wear."

'Mr. Claude Sorel, Mtn. Manager, Emmott Valley Transportation Co., "RED BLOCK has proven superior in all respects to any brake blocks previously used by us. Dependable brake action, high mileage and exceptionally long drum life make RED BLOCK the answer to a maintenance manager's prayer. I sincerely recommend World Bestos RED BLOCKS to any fleet operator."

For Full Information about World Bestos RED BLOCK and the complete line of World Bestos Job-Tested Brake Linings and Friction Materials, see your Jobber or write to World Bestos, New Castle, Ind.

WORLD BESTOS
NEW CASTLE, INDIANA

Co.; Cummins diesel engine; Wickwire rope, a Skagit loader powered with a Ford industrial engine, Atkins saws, Larson logging tools, and Lubriplate grease.

Boeing jet truck engine; U.S. Royal tires; Armstrong tires; Mall Chain saws; Hammond-Hensen aerial surveys and mapping; Dodge trucks and Dodge Power Wagons; Bendix Westinghouse airbrakes; Union wire rope; and Hornet chain saws.

I.E.L. chain saws Engine Life oil filters, Lasco brake linings, and Pacific Wire Rope; Alco Machine Works planers; Peterbilt logging truck powered with a Buda diesel engine.

The equipment committee was headed by Ed Gurney, Sierra Tractor & Equipment Co., and the other members were: Wm. Sullivan, Sullivan & Crowe; F. E. Pleuss, Mack Trucks; Grant Thompson, Sierra Tractor & Equipment Co.; Ben Scott, Fred E. Barnett Co.; John Reiser, Redding Oil Co., General Petroleum distributors; J. H. Hart, Hart Motor Co.; Henry Leavitt, Leavitt Power Tool Co.; T. E. Mackrell, Moore Equipment Co.; Glenn R. Gunderson, J. T. Jenkins Co.

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MOBILCRANE...new cost-cutting champ in logging camps from coast-to-coast

When OSGOOD Mobilcranes move in, the timber moves out—faster, easier, at lower cost. It's been proved in logging camps across the continent. Greater maneuverability and more lifting power speed the job. One-man, one-engine operation saves fuel, time, and manpower.

Swing, hoist, and travel motions are velvet smooth; control is instant and accurate—all because of the economical, trouble-free OSGOOD Air Cushion Clutch with Air Control, greatest advancement in handling equipment in a quarter century. Write now.

CRAWLER and pneumatic-tire mountings are both available on OSGOOD machines which include a complete line of cranes, power shovels, hoes, and other power equipment.

Equipment designed with your profit in mind

The OSGOOD COMPANY
MARION, OHIO
AFFILIATED WITH THE GENERAL EXCAVATOR CO.

POWER SHOVELS, CRANES
DRAGLINES, CLAMSHELLS
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CAPACITIES ⅛ TO 2½ CU. YD.

Distributors:
General Machinery Company, Spokane 1, Washington
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Western Equipment Co., Portland and Eugene, Oregon

Kiln Drying Questions and Answers

The West Coast Dry Kiln Club held its December meeting at Vernonia, Ore., with Oregon-American Lumber Corp. acting as host of the group. The meeting, chairmanned by Mitchell Slyter, Wilson River Lumber Co., Portland, president of the club, featured a question and answer program of round table discussion with A. C. Knauss, U. S. Forest Service, presiding as moderator.

Q—What is a satisfactory schedule for drying cedar shingles?

A—(1) For shingles from highland Western Red cedar, one operator is using a dry bulb temperature of 150° to 170°, with the spray valve closed for the entire length of the run. Vents are open at all times. Drying time about 7 days, with satisfactory results.

(2) Shingles from lowland or swamp land Western Red cedar, also sinker stock, should be started at 105°. Spray valve, and vents as in (1).

Q—What is the cause for a drop of 12° in the entering air stream of a double track cross circulation kiln when circulation is reversed? This condition exists only when air is traveling in one direction.

A—After several exchanges of opinion it was decided this difficulty probably could be traced to the heating system or to spotty circulation.

Q—An operator reported that 5/4" Sitka spruce beveled siding stock which tested a maximum of 8% MC when taken from the kiln, had, 5 weeks later, after being stored in a covered shed, increased to 14% on the surface. The core showed 7%.

A—Moisture absorption of Douglas fir stored in closed sheds in December showed an increase of 2% in 5 days and 5% in 72 days, according to one test. The EMC condition of some covered storage sheds has been known to be as high as 15%. The absorption of moisture by Spruce is considered more rapid than by Douglas fir.

Q—Is there any advantage in increasing the relative humidity for a short period of time in the center of a scheduled run and then continuing on a stiffer drying humidity?

A—The only possible advantage would be to temporarily relieve case hardening which can satisfactorily be done by a conditioning period at the end of the run. Temporarily relieving in the middle of a run is not considered a good common practice.

Q—Finished West Coast hemlock flooring which was stored about 10 days where it was vulnerable to fog on one end picked up 3/32" at the exposed end. Will this stock return to original size in shipment?

A—Reaction of this material depends entirely on conditions encountered during shipment. The solution to the problem would be to control conditions in storing prior to shipping. After stock is in transit about all we can hope for are favorable conditions.

Q—To what extent are end seals being used to protect dry lumber?

A—Some door stock and crossarm stock are the only known materials being end coated at this time.

Q—Two 1½" cross sections of green second growth Douglas fir were shown. The Keep Oregon Green organization requested information on how to dry these without checking.

A—Mr. Knauss informed the club that the laboratory at Madison, Wisconsin, had been working on this subject and that he would get this information and relay it to the secretary.

Cedar Shingles Withstand 136 M.P.H. Man-Made Gale

A wind velocity of 136 miles per hour, greater than that experienced in any general windstorm, failed to disturb or distort in any way a roof panel of red cedar shingles subjected to wind-tunnel tests recently at the University of Wichita in Wichita, Kansas, it has been revealed by the Red Cedar Shingle Bureau.

Purpose of the tests, according to Bureau Secretary-Manager W. W. Woodbridge, was to determine the actual intensity of wind required to blow off cedar shingles from a typically-constructed roof panel.

"And the tests were a dismal failure!" quipped Woodbridge. "Instead of revealing the amount of hurricane force which is required to cause failure in a cedar shingle roof, the panels successfully resisted the maximum wind velocity which the University of Wichita's wind tunnel could generate—namely, 136 miles per hour. So we still don't know the collapse point, but we do know that it is greater than 136 miles per hour."

The University of Wichita's wind tunnel, normally used for aeronautical research, is a return-flow atmospheric type tunnel with a test section seven feet high and ten feet wide. In this test section a cedar shingle roofing panel, slightly larger than five feet by eight feet in size, was installed at a 30-degree angle to simulate normal pitched roof construction. The shingles were No. 1 Certigrade 16-inch XXXXX, laid at standard five-inch weather exposure. Woodbridge emphasized that the application of the shingles followed normal, standard practice in every way.

When it was observed by University engineers who conducted the tests that no deformation of any shingles occurred at lower tunnel speeds, the velocity was progressively stepped up until the maximum available from the two Allison aircraft engines of 1,150 horsepower had been reached, Woodbridge reported. At this maximum point, the testing equipment revealed that a wind speed of 136 miles per hour existed at the top of the panel, declining to 81 miles per hour at the base of the panel due to compressibility factors.

"These wind tunnel tests, made under controlled conditions simulating those actually experienced in normal construction and use, provide scientific support to the excellent record of wind resistance which has been established over many years by cedar shingle roofs in this country," Woodbridge stated.

Look who's sporting a halo!

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It's Sam the saw filer . . . the man of the moment around the mill since he started using Simonds Abrasive Company wheels for keener-cutting, longer-lasting saws. You'll find everything you need for low cost cutting efficiency in Simonds complete line, including wheels of all shapes and sizes for saw gumming and knife grinding . . . F face straight wheels, saucer and cup wheels, cylinders and segments . . . accurately specified for ALL your grinding jobs by Simonds Abrasive Company, a major manufacturer of grinding wheels for more than 50 years. Order from nearest Simonds branch or distributor.

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RECORD ATTENDANCE AT BRITISH COLUMBIA TRUCK LOGGERS MEETING

New executives of the B. C. Truck Loggers Association. Left to right: Back row—H. J. Welch, Olympic Forest Products, Qualicum Beach; Howard Kelsey, Kelsey-Johnson Ltd., Vancouver; Tom Nevis, Vancouver, secretary; J. W. Baikie, Brothers Logging Co., Campbell River, president; D. M. Mackenzie, WMF Logging Co., Vancouver, vice-president; Tom Dickinson, Van West Logging Co., Vancouver; A. E. Gibson, Tahsis Co., Vancouver, G. H. Clarke, Clarke Brothers Timber Co., Vancouver, immediate past president. Front row—H. C. McQuillan, McQuillan Logging Co., Vancouver; J. E. Fletcher, Tsable River Logging Co., Fanny Bay; George Percy, Alaska Pine, Vancouver; Jack Allison, Allison Logging Co., North Vancouver; O. S. Lane, Lane Logging Co., Phillips Arm; and A. B. Bandickson, Bandickson Logging Co., 1939 Ltd., Kelsey Bay; L. A. Moloney, Moloney Logging Co., Vancouver, one of the directors, was absent when the photo was taken.

British Columbia loggers were among the first to use trucks in their business, and some of them can recall the introduction of the logging truck on Vancouver Island and the lower mainland back in 1923—an almost prehistoric date, relatively, even though the late Ole Buck is generally credited with being the first to use big, specially made trucks for hauling logs.

But there's a saying in B.C. that "every logger is a truck logger today," and it wouldn't have been hard to convince any one of the truth of that statement after attending the eighth annual meeting of the Truck Loggers Association in Hotel Vancouver, Vancouver, B.C., January 17, 18 and 19.

This fastest-growing organization in the Northwest forest industry had more than 1,200 delegates registered. They came from all over the province.

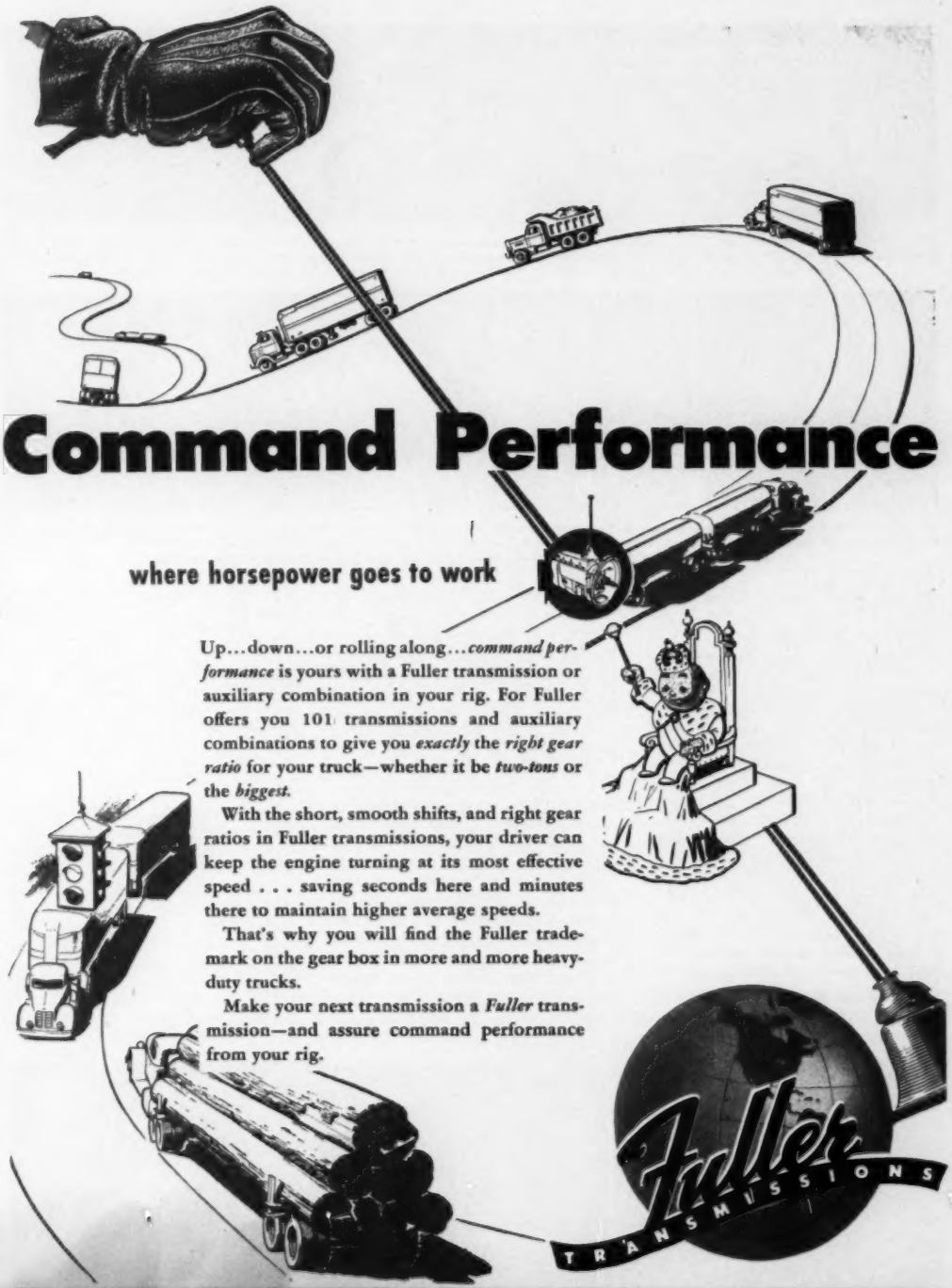
New Officers Elected

J. W. Baikie, Baikie Bros. Logging Co., Campbell River, was elected president and D. M. Mackenzie of the WMF Logging Co., Vancouver, vice-president. The retiring president, G. H. Clarke of Clarke Brothers Timber Co., Vancouver, joins the board of directors.

Newly elected directors are George Percy, Alaska Pine, Vancouver; Tom Dickinson, Van West Logging Co., Vancouver; and Howard Kelsey, Kelsey-Johnson Ltd., Vancouver.

The remainder of the board of twelve were re-elected. They are H. J. Welch, Olympic Forest Products, Ltd., Qualicum Beach; J. E. Fletcher, Tsable River Logging Co., Fanny Bay; O. S. Lane, Lane Logging Co., Phillips Arm; Jack Allison, Allison Logging Co., North Vancouver; A. E. Gibson, Tahsis Co., Vancouver; L. A. Moloney, Moloney Logging Co., Vancouver; A. B. Ben-

G. A. Ebert and W. H. Colley, of Alaska Pine Trading Co., logging division; Paul T. Cote, logging engineer, and M. Rockwell, superintendent, Fleetwood Logging Co., Harrison Lake; Harold Mann, Eagle Lake Sawmills, Giscome, and Archie McKone, of McKone & Smith, new truck logging for B. C. Forest Products at Port Renfrew; W. Dewar, Northwest Bay Division, H. R. MacMillan Export Co.



Command Performance

where horsepower goes to work

Up...down...or rolling along...*command performance* is yours with a Fuller transmission or auxiliary combination in your rig. For Fuller offers you 101 transmissions and auxiliary combinations to give you *exactly* the *right gear ratio* for your truck—whether it be *two-tons* or the *biggest.*

With the short, smooth shifts, and right gear ratios in Fuller transmissions, your driver can keep the engine turning at its most effective speed . . . saving seconds here and minutes there to maintain higher average speeds.

That's why you will find the Fuller trademark on the gear box in more and more heavy-duty trucks.

Make your next transmission a *Fuller* transmission—and assure command performance from your rig.

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Bob Maxwell, Simon-Maxwell, Ltd.; J. D. Creighton and Gordon Draeske, Alaska Pine Co.; Everett York, west coast manager for Buda Co., Los Angeles; Don McGraw and Harry Bell of Henry Disston & Sons, Inc., with Gordon Burns of Passmore Lumber Co., which recently took out a forest management license—one of the first in the B.C. interior; E. L. Vance, of Glacier Lumber Co., Nelson.

Left to right: Im Crickmay, logging engineer, B. C. Forest Products; S. D. Craig, Brown, Fraser Co., A. G. Forrester, logging engineer, B.C. Forest Products at Vancouver Bay; Dick Donovan of Donovan & Dougan; Joe Zanatta, Campbell River logger; T. W. McKenzie, P. H. & M. Logging Co., Royston; H. P. Baikie, Baikie Bros., Campbell River, H. E. Hearle, P. H. & M. Logging Co.

dickson, Bendickson Logging Co. 1939 Ltd., Kelsey Bay; and H. C. McQuillan, McQuillan Logging Co., Vancouver.

Tom Novis was elected secretary to succeed F. H. Adames.

Jack Baikie, the Truck Loggers' new chief, is one of three brothers who have been prominent in the affairs of the association since its inception. The other brothers are Harper and Wallace, the latter having been with Bert Welch, Frank Parker and a few other pioneers one of the "originals." The Baikies recently opened a sawmill at Campbell River and in addition have logging camps at Browns Bay and Union Bay. They have been logging as long as they can remember, their first stake being on Denman Island.

Scandinavian Forest Methods

There was not much formal discussion of logging methods this year, most of the time being given over to timber sale procedure, safety programs, and the observations of the British Columbia delegation headed by Minister of Forests E. T. Kenney during a visit to Scandinavia last fall.

Some of the impressions of the party to Sweden were noted in The LUMBERMAN previously, but they were elaborated on by Mr. Kenney, minister of forests, G. Harold Clarke, retiring chairman of the association; Dr. C. D. Orchard, deputy minister of forests for B. C., and John Liersch, assistant to the president, Powell River Co. W. D. Hagenstein, of the Forest Conservation Committee, Portland, contributed to this discussion by telling about the application of forest management in the woods of the Northwest states.

Mr. Clarke emphasized that Scandinavian forest policy was dictated by economic necessity. "The experience of Sweden in its highly efficient forest management can be a guide to us here in the Northwest, but it is not a pattern to be followed," said Mr. Clarke. "Unless economic considerations are taken into account—and these are far different in Scandinavia from what they are here—the whole objective will be lost."

Dr. Orchard claimed that a rational forest policy based on sustained yield was imperative for B.C. unless the province were to face a future bankruptcy in timber. "But there is no reason to doubt," he added, "that in 50 to 100 years from now, if we apply the principles of proved forest management, we can harvest ten to fifteen billion feet of timber in B.C. annually and still be on the safe side." The 1950 cut was about four billion feet.

Leslie Trotheway, Clarke Bros. Timber Co., Harrison Lake; P. C. A. Morin, Cameleon Logging Co., Rock Bay; H. W. Germyn and G. Germyn, who operate under their own name in Blind Channel, two of seven brothers in the logging business; C. H. Leffler and E. A. Tarrien, the latter owner of Coombs Timber Co., Parksville, and J. Dougan of Dougan & Donovan, now engaged in selective logging in the Cathedral Grove stand, Cameron Lake; S. T. Dumaresq, Dumaresq Bros. Logging Co., Allison Harbor.

Roy Smith, B. C. Forest Products; F. Barwell, G & F Logging Co.; G. Barwell of the same; Roy Lehman and J. H. McLean, Workmen's Compensation Board; Joe Cliffe, Ladysmith foreman for Comox Logging & Railway Co., one of several brothers with that company; Fred Fraser, forest insurance authority; G. Hawthornthwaite, foreman, Comox Logging Co., Ladysmith; G. Naylor, foreman, Comox Logging Co. at Nanaimo Lakes.

Virgil Stoltz, Stoltz Logging Co., Duncan; J. D. McLaughlin, Baker Island Logging Co.; E. J. Hiland, Hiland Logging Co.; Rae Johnson, woods manager, Columbia Cellulose Co.; R. H. Chestnut, Hudon Logging Co.; Harrison River; A. B. Greenwood, West Vancouver; H. L. Bendickson, Bendickson Logging Co., Minstrel Island; Earson Gibson, Tahsis Co.; Oskar Johnson, of Oskar Johnson Logging Co., Seymour Inlet.

"British Columbia actually grew about 3½ billion feet and cut 4 billion feet, or 600 million cubic feet," said the deputy minister. "The two Scandinavian countries cut three times as much as we did, yet stayed inside their annual increment figure—clear evidence that without genuine forest management our forests are on the downgrade. We in B.C. are spending more than our income in forest growth."

Safety Pays

There was a panel discussion on safety measures, the objective being to determine how a practical program could most advantageously be developed for the small operator. Robert Evenden of Salem, Ore., acted as moderator, and the panel consisted of Jim Sheasgreen, manager of Comox Logging & Railway Co.; Jim Roughton, safety director for the B.C. Loggers Association; Tom North, safety supervisor for Alaska Pine Co. and Roy Evans, safety director of B.C. Forest Products.

The importance of an accident prevention program to the small operator was underscored by all members of the panel.

"If a good safety program pays off for the large operator it automatically is worth while for the smaller operator," said Roy Evans, and Tom North pointed out that in most small camps the operator knew all his men personally, they were often members of his own family and more like partners than employees. For that reason their safety should be as important to the operator as to the individual worker.

Jim Sheasgreen pointed out that safety even if human injury were not involved was important because carelessness could lead to costly delays and damage to equipment. To the small logger this was particularly serious because if, for instance, a truck were to go out of commission the cost of the whole operation's production was automatically increased. So far as human injury was concerned, Mr. Sheasgreen pointed out that in a small camp one serious human injury could make a big difference in the company's compensation rate and would give the operator, in some instances, a demerit rating that would take a long time to live down.

Mr. North had a ready answer to the question: What are the essential parts of a safety program? The one great essential, he said, was the interest of top management. "This calls for not only approval and acquiescence on the part of top management, but insistence on a safe operation," said the Alaska Pine safety man.

Discussion of safety measures was introduced by Hon. John H. Cates, British Columbia's minister of labor who in private life is in the tugboat business. "Nothing contributes more to good feeling in a logging organization than concern shown by management for the men who work there," said Mr. Cates. "But it must be a joint effort to be really effective. There's got to be teamwork on this safety idea, or the whole thing falls apart."

Government Timber Sales Policy

Among British Columbia loggers there has been a good deal of in-

(Concluded on Page 163)

Reg. Shoebridge, manager of Gearmatic Co. showing one of the Model 16 Gearmatic units to J. Kivela of Northwest Bay Logging Co. and W. R. Malpass of R. Malpass Logging Co.

THE HUNDRED WESTERN SAWMILLS

which produced the most lumber in 1950

The LUMBERMAN presents its annual compilation of the 100 western mills which produced the most lumber in 1950. This compilation shows six more mills in the hundred million and over class than in 1949. There were just about the same number in the 50,000,000 to 100,000,000 class. It is interesting to note that in this compilation a mill had to have cut 38,000,000 feet or more to qualify, whereas, in 1949 mills cutting 32,000,000 feet were included. It will be noted that some firms grouped the production for more than one mill, while others report individual mill operations. If all reported on the same basis some changes would appear in the relative position of a few companies. For instance Pope & Talbot, Inc., would be well toward the head of the list, as would B. C. Forest Products, Ltd. Weyerhaeuser Timber Co.'s mills are not shown in this compilation. At press time reports had been received from all but a few mills that might qualify for this listing.

Firm Name	*Location*	*Lbr. Ft. BM.*
Potlatch Forests, Inc.,	Lewiston, Ida.	**349,224,024
The Long-Bell Lbr. Co.,	Longview, Wash.	266,061,558
C. D. Johnson Lbr. Corp.,	Toledo, Ore.	171,451,000
Can. White Pine (MacMillan),	Vancouver, B.C.	171,109,187
Can. Western Lbr. Co.,	Fraser Mills, B.C.	161,279,000
Coos Bay Lbr. Co.,	Coos Bay, Ore.	151,299,536
Can. For. Prod. (Eburne),	Vancouver, B.C.	146,859,218
Edward Hines Lbr. Co.,	Hines, Ore.	128,566,950
Irwin & Lyons,	North Bend, Ore.	123,926,549
Pope & Talbot, Inc.,	St. Helens, Ore.	118,657,000
Roseburg Lumber Co.,	Roseburg, Ore.	*117,050,869
McCloud River Lbr. Co.,	McCloud, Calif.	115,405,000
The Pacific Lbr. Co.,	Scotia, Calif.	114,709,000
Southwest Lbr. Mills, Inc.,	McNary, Ariz.	112,061,626
Santiam Lumber Co.,	Lebanon, Ore.	*110,676,876
Ralph L. Smith Lbr. Co.,	Anderson, Calif.	*110,000,000
Simpson Logging Co.,	Shelton, Wash.	109,613,773
Shevlin-Hixon Co.,	Bend, Ore.	107,422,000
Hammond Lbr. Co.,	Samoa, Calif.	*107,247,170
Victoria Lbr. (MacMillan),	Victoria, B.C.	107,000,000
Alaska Pine Co., Ltd.,	Vancouver, B.C.	105,501,107
B. C. Forest Products, Ltd.,	Youbou, B.C.	96,500,000
Alberni-Pacific Lbr. Co.,	Port Alberni, B.C.	95,819,000
St. Paul & Tacoma Lbr. Co.,	Tacoma, Wash.	94,721,405
Anaconda Copper Mining Co.,	Bonner, Mont.	89,092,813
Long-Bell Lbr. Co.,	Weed, Calif.	86,167,000
Diamond Match Co.,	Spokane, Wash.	86,000,000
Bloedel, Stewart & Welch,	Port Alberni, B.C.	86,000,000
Brooks-Scanlon Lbr. Co.,	Bend, Ore.	85,990,000
Union Lbr. Co.,	Fort Bragg, Calif.	85,000,000
J. Neils Lbr. Co.,	Libby, Mont.	81,613,000
Willamette Valley Lbr. Co.,	Dallas, Ore.	77,361,000
Universal Box Co.,	Vancouver, B.C.	77,546,709
Pickering Lbr. Corp.,	Standard, Calif.	75,886,220
Ore.-Am. Lbr. Corp.,	Vernonia, Ore.	74,202,186
Pope & Talbot, Inc.,	Oakridge, Ore.	72,521,125
Western Forest Ind.,	Honeymoon Bay, B.C.	71,243,195
Medford Corp.,	Medford, Ore.	70,500,000
Diamond Match Co.,	Chico, Calif.	68,791,733
Coos Head Timber Co.,	Coos Bay, Ore.	66,150,000
Long-Bell Lumber Co.,	Gardiner, Ore.	65,307,961
Cape Arago Lumber Co.,	Empire, Ore.	65,108,579
New Mexico Lbr. Co.,	Albuquerque, N.M.	65,000,000
Oceanside Lbr. Co.,	Garibaldi, Ore.	64,723,938
Ohio Match Co.,	Heutter, Ida.	64,051,000
California Barrel Co.,	Arcata, Calif.	63,000,000
B. C. Forest Products Co.,	Victoria, B.C.	63,000,000
Shafer Bros. Lbr. & Sgh. Co.,	Aberdeen, Wn.	62,395,244
Booth-Kelly Lbr. Co.,	Springfield, Ore.	62,066,200
Tahsis Company, Ltd.,	Vancouver, B.C.	61,000,000
Cascade Lumber Co.,	Yakima, Wash.	60,000,000
Pacific Pine Co.,	New Westminster, B.C.	60,000,000
Edward Hines Lumber Co.,	Westfir, Ore.	58,775,167
Shepard & Morse Lbr. Co.,	Westport, Ore.	57,069,927
Willamette Natl. Lbr. Co.,	Foster, Ore.	56,224,000
Robert Dollar Co.,	Glendale, Ore.	54,713,000
Bloedel, Stewart & Welch,	Gt. Cent., B.C.	53,604,000
Ind. Lbr. & Mfg. Co.,	Independence, Ore.	53,284,515
Boise-Payette Lbr. Co.,	Boise, Ida.	53,112,000
Magnolia Lumber Co.,	Ashland, Ore.	*52,587,060
Setzer Products Co.,	Sacramento, Calif.	*52,125,000
Klamath Basin Pine Mills,	Klamath Falls	52,016,395
Inman-Poulson Lbr. Co.,	Portland, Ore.	52,000,000
LHL Lumber Co.,	Carlton, Ore.	51,535,122
Dolly Varden Lbr. Co.,	Arcata, Calif.	51,000,000
Cal-Ida Lbr. Co.,	Auburn, Calif.	51,000,000
Hillcrest Lbr. Co.,	Mesatchie Lake, B.C.	50,500,000
Moore Mill & Lumber Co.,	Bandon, Ore.	49,883,014
B. C. Forest Products,	Hammond, B.C.	49,300,000
Collins Pine Co.,	Chester, Calif.	52,671,000
Pope & Talbot, Inc.,	Port Gamble, Wash.	48,650,079
Biles-Coleman Lbr. Co.,	Omak, Wash.	48,103,000
M. B. King Lbr. Co.,	North Vancouver, B.C.	*47,594,000
Scott Lumber Co.,	Burney, Calif.	47,525,000
Engle & Worth Lbr. Co.,	McMinnville, Ore.	*47,180,601
Westside Lbr. Co.,	Tuolumne, Calif.	47,000,000
Seaboard Lumber Co.,	Seattle, Wash.	46,250,000
Winton Lumber Co.,	Martell, Calif.	44,702,700
Valsetz Lumber Co.,	Valsetz, Ore.	44,295,946
Columbia-Hudson Lbr. Co.,	Bradwood, Ore.	42,304,000
Olympic Hardwood Co.,	Raymond, Wash.	41,994,987
Sound Lumber Co.,	Arcata, Calif.	41,572,269
Defiance Lbr. Co.,	Tacoma, Wash.	41,225,000
Youngs Bay Lbr. Co.,	Roseburg, Ore.	41,025,000
Stebco, Inc.,	Vancouver, Wash.	40,981,301
Elk Lumber Co.,	Medford, Ore.	40,956,218
Rosboro Lumber Co.,	Springfield, Ore.	40,920,000
Anderson & Middleton,	Aberdeen, Wash.	40,709,965
Nettleton Timber Co.,	Seattle, Wash.	40,573,000
J. Neils Lbr. Co.,	Klickitat, Wash.	40,478,725
Eclipse Lumber, Inc.,	Everett, Wash.	40,210,000
Alexander-Yawkey Lbr. Co.,	Prineville, Ore.	40,000,000
Timberland Lbr. Co.,	New Westminster, B.C.	40,000,000
Bay City Lbr. Co.,	Aberdeen, Wash.	39,718,047
Fischer Lbr. Co.,	Marcola, Ore.	39,500,000
Lassen Lbr. & Box Co.,	Susanville, Calif.	39,442,445
Deer Park Pine Industries,	Deer Park, Wash.	39,230,000
Gilchrist Lbr. Co.,	Gilchrist, Ore.	39,037,000
Blagen Lbr. Co.,	White Pines, Calif.	38,786,522
Glaspie Lbr. Co.,	Vancouver, B.C.	38,782,377

* Two mills. ** Three mills.

The Great New Logging Tire

Job-Fitted

to your exact requirements!

BETTER OFF-THE-ROAD PERFORMANCE! *Now, for the first time, you have a genuine logging tire that does its job off the road as no tire ever did before it—with entirely new* **PENETRATION** *and* **TRACTION** *—with* **TREAD** *and* **CARCASS JOB-FITTED** *to match the roughest and toughest going.*

BETTER ON-THE-ROAD PERFORMANCE! *Yes, and when you pull, loaded or empty, onto the road or highway, you have a* **SMOOTH-ROLLING ANTI-SKID TIRE** *to match its* **OFF-THE-ROAD EFFICIENCY!**

BETTER *IN CONSTRUCTION!* The Fleetmaster is a new and revolutionary tire, job-fitted and actually designed for the logging work it must do—with **TREAD COMPOUNDS TO YOUR EXACT REQUIREMENTS**—with a 70% **DEEPER TRACTION TREAD**—with **ENTIRELY NEW *INNER CAVITY FORM*** (round moulded to the tire's inflated shape allowing deeper traction tread, thicker under tread).

BETTER *IN TREAD AND CARCASS LIFE!* From the massive records of other users, these great Fleetmasters should give **YOU** what they are giving everywhere—up to **50% MORE ACTUAL TIRE LIFE.**

BEFORE YOU INVEST A PENNY! ***Get our complete proof demonstration! A phone call does it—to your nearest U. S. Royal Dealer***

UNITED STATES RUBBER COMPANY

Production of SOUTHERN MILLS in 1950

Firm	Address	Ft. B.M.
Russellville Lumber Co.,	Russellville, S.C.	82,000,000
Crossett Lumber Co.,	Crossett, Ark.	58,137,253
D. L. Fair Lumber Co.,	Louisville, Miss.	56,034,695
Southern Lumber Co.,	Warren, Ark.	43,500,000
Whitener Lbr. Co., Inc.,	Newberry, S.C.	40,000,000
Hillyer-Deutsch-Edwards Co.,	Texarkana, Texas	39,123,547
Fordyce Lumber Co.,	Fordyce, Ark.	33,500,000
Crosby Lbr. & Mfg. Co.,	Crosby, Miss.	33,499,293
Woodward-Walker Lbr. Co.,	Taylor, La.	32,219,994
Angelina County Lbr. Co.,	Keltys, Texas	30,300,000
W. A. Belcher Lbr. Co.,	Centerville, Ala.	29,507,666
Texas Long Leaf Lbr. Co.,	Trinity, Texas	29,454,410
Southern Pine Lbr. Co.,	Texarkana, Texas	29,271,000
Brooks-Scanlon, Inc.,	Foley, Fla.	26,000,000
Ozan Lumber Co.,	Prescott, Arkansas	24,643,130
Camp Manufacturing Co.,	Franklin, Va.	24,078,775
Gulf Lumber Co.,	Mobile, Ala.	23,792,315
Holly Hill Lumber Co.,	Holly Hill, S.C.	22,000,000
Richmond Cedar Works,	Norfolk, Va.	20,800,000
Lightsey Bros.,	Miley, S.C.	20,674,000
A. DeWeese Lumber Co.,	Philadelphia, Miss.	20,207,000
Gennett Lumber Co.,	Asheville, N.C.	20,000,000
The Alger-Sullivan Lbr. Co.,	Century, Fla.	19,707,000
Foster Lumber Co.,	Fostoria, Texas	19,301,111
Henderson-Molpus Co.,	Philadelphia, Miss.	18,200,000
J. A. Bentley Lbr. Co.,	Zimmerman, La.	18,000,000
The A. B. Carroll Lbr. Co.,	Hurtsboro, Ala.	18,000,000
Green Bros. Lbr. Co.,	Elizabethtown, N.C.	16,432,834
Urania Lumber Co.,	Urania, La.	15,393,424
Roy O. Martin Lbr. Co.,	Alexandria, La.	15,047,479
Cary Lumber Co.,	Tillery, N.C.	15,000,000
Gurdon Lumber Co.,	Gurdon, Ark.	14,684,931
Smith Lumber Co.,	Red Bay, Ala.	13,292,357
Louisiana Cypress Lbr. Co.,	Ponchatoula, La.	13,000,000
Hancock Lumber Co.,	Quitman, Ga.	12,400,000
Daugherty Lumber Co.,	Dothan, Ala.	12,000,000
C. L. Gray Lumber Co.,	Meridian, Miss.	12,000,000
Hutchinson Lumber Co.,	Georgetown, Miss.	12,000,000
Edens-Birch Lumber Co.,	Cleveland, Texas	12,000,000
Williams Lumber Co.,	Rocky Mount, N.C.	11,800,000
Cherry River Boom & Lumber Co.,	Richwood, W. Va.	11,686,000
Springhill Lumber Co.,	Springhill, La.	11,000,000
H. R. Mosley,	Elberon, N.C.	11,000,000
Seagrove Lumber Co.,	Seagrove, N.C.	11,000,000
Mullins Lbr. Co.,	Mullins, S.C.	10,768,000
S. J. Peeler Lumber Co.,	Kosciusko, Miss.	10,132,000
Scott Lumber Co.,	Henderson, Ky.	10,000,000
Thomas Lumber Co.,	Winnfield, La.	10,000,000
Arnold Lumber Co.,	Hogansville, Ga.	10,000,000
Bond Bros.,	Louisville, Ky.	10,000,000
Thomas Lumber & Mfg. Co.,	Quincy, Fla.	10,000,000
Graham Lumber Co., Inc.,	Maplesville, Ala.	10,000,000
W. C. Brooks & Son, Inc.,	Tappahannock, Va.	9,798,605
American Hardware Co.,	Petersburg, Va.	9,500,000
Woods Lumber Co.,	Memphis, Tenn.	9,377,337
Lexington Lumber Co.,	Orangeburg, S.C.	9,128,720
Fuller Lumber Co.,	Lewisville, Ark.	9,000,000
Christian Lumber Co.,	Monticello, Ky.	9,000,000
Cleveland Lumber Co.,	Cleveland, Ga.	9,000,000
Jim Wallace Lbr. Co., Inc.,	Talladega, Ala.	9,000,000

Firm	Address	Ft. B.M.
Walton Lumber Co.,	Dunbarton, Va.	8,370,201
Wright Lumber Co.,	Bristol, Tenn.	8,000,000
S. D. Quarles,	Ashland, Va.	8,000,000
Rathborne Lbr. & Supply Co.,	Roseland, La.	8,000,000
M. L. Green Mfg. Co.,	Montrose, Ga.	8,000,000
Kellogg Lumber Co.,	Monro, La.	8,000,000
Virginia & Carolina Lumber Corp.,	Warrenton, N.C.	8,000,000
Victoria Supply Co.,	Victoria, Va.	8,000,000
Santee River Hardwood Co.,	St. Stephen, S.C.	7,969,000
Anderson Mfg. Co.,	Tenaha, Texas	7,599,871
Fernwood Industries,	Fernwood, Miss.	7,514,069
Dadeville Lumber Co.,	Dadeville, Ala.	7,500,000
Poinsett Lbr. & Mfg. Co.,	Pickens, S.C.	7,500,000
Davis Lumber Co.,	Cullman, Ala.	7,253,000
Cozier Container Corp.,	Cheraw, S.C.	7,200,000
Central Lumber Co.,	Brookhaven, Miss.	7,135,000
Pearson Lumber Co.,	Tuscaloosa, Ala.	7,000,000
Stark Company,	Memphis, Tenn.	7,000,000
Vestal Lumber & Mfg. Co.,	Cayce, Tenn.	6,972,092
Edwards Lumber Co.,	Rush, Texas	6,897,000
Casey Lumber Co., Inc.,	Rocky Point, N.C.	6,892,474
Marshall Lbr. & Mill Co.,	Montgomery, Ala.	6,750,000
Hassel & Hughes Lbr., Co.,	Collinwood, Tenn.	6,500,000
Peek Bros. Lumber Co.,	DeQueen, Ark.	6,500,000
Chatsworth Lbr. Corp.,	Chatsworth, Ga.	6,500,000
Davidge Lumber Co.,	Natalbany, La.	6,051,141
M. E. Hudson Lumber Co.,	Clayton, Ala.	6,460,010
Halsey Hardwood Co., Inc.,	Edenton, N.C.	6,000,000
Cotton-Hanlon-Young, Mayo,	Va.	6,000,000
Dodge County Lumber Co.,	Eastman, Ga.	6,000,000
Cuffman Lumber Co., Inc.,	Malvern, Ark.	6,000,000
Potomac Supply Corp.,	Kinsale, Va.	6,000,000
Tiger River Pine Co.,	Shelton, S.C.	6,000,000

EASTERN CANADA

Price Bros.,	Price, Quebec	54,000,000
J. J. McFadden Lbr. Co.,	Blind River, Ont.	37,436,000
The Pas Lumber Co.,	The Pas, Man.	33,000,000
Geo. Gordon & Co., Ltd.,	Cache Bay, Ont.	19,121,900
Gt. Lakes Lbr. & Shp. Co.,	Ft. William, Ont.	7,020,600

Lake States and Northeast

Atlantic Lumber Co.,	Buffalo, N.Y.	45,000,000
Menominee Indian Mills,	Neopit, Wis.	24,834,000
C. M. Christensen Co.,	Phelps, Wis.	10,568,340
Cadallac Soo Lbr. Co. S.	Sainte Marie, Mich.	16,316,177
William Bonifas Lbr. Co.,	Neenah, Wis.	15,000,000
Vulcan Corp.,	Antigo, Wis.	14,500,000
Ahonen Lumber Co.,	Ironwood, Mich.	11,481,964
Cotton-Hanlon, Inc.,	Odessa, N.Y.	7,243,828
Fisher & Young,	Titusville, Pa.	6,504,392
Underwood Veneer Co.,	Wausau, Wis.	6,000,000
Erickson Hardwoods,	Olalsaka, Wis.	6,500,000
F. C. Snedaker & Co.,	Fleetwood, Pa.	4,892,032
N. T. Fox Co.,	Portland, Me.	4,365,000
Oval Wood Dish Corp.,	Tupper Lake, N.Y.	3,254,323
Knoke Lbr. Co.,	Appleton, Wis.	3,121,450
Blout Lbr. Co.,	Laeona, N.Y.	3,000,000
C. B. Norton & Son,	Great Valley N.Y.	3,000,000

for a load of lumber!

Boards don't bounce off on even the roughest ride when Stanley Steel Strapping holds the bundle together. And that's only one way the Stanley Steel Strapping System earns its keep wherever lumber is handled.

With Steel Strapping, lumber can be stacked higher—saving space. Tallying is easier, more accurate. Selection for delivery to a job can be made more quickly. Uni-tied loads are more easily rolled off trailer at job site—remain intact with less chance of pilferage.

The Stanley Works, Steel Strapping Div., 253 Lake Street, New Britain, Connecticut. *Offices in principal cities.*

STEEL STRAPPING AND CAR BANDING SYSTEMS

STANLEY

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STEEL STRAPPING • STEEL

THE HUSS CHRONICLE

From the Files of

THE LUMBERMAN, MARCH, 1921

The Monroe Shingle Co., Eugene, Ore., purchased 24,000,000 feet of Forest Service timber on a bid of $1.50 for the cedar and 50 cents per M for the fir and hemlock.

The Southern Pine Association New Orleans, reported that it showed its industry motion pictures to more than 250,000 persons in 1920.

Inman-Poulsen Lumber Company, Portland, Oregon, completed the electrification of its large sawmill.

From British Columbia came reports of resumption of operation of a number of logging camps and that wages were on the following basis: Engineers $133 per month; cooks $115 per month. Fillers $4 per day; head fallers $3.75; swampers $3; high riggers $6; hook-on men $3.50; pump men $3; head boom men $4; blacksmith helpers $2.50.

F. J. Bannister of Kansas City, was elected president of the Long-Bell Lumber Co., succeeded R. A. Long who became chairman of the board.

F. S. Murphy a field man for the LLLL following a visit to the Polson Logging Company's Grays Harbor logging camps, reported that every man in the employ of the company was an American citizen or had taken out citizenship papers.

George M. Curtis, prominent Iowa Lumberman died.

Waterbourne shipments of lumber for 1920 were reported as having been 1,840,791,130 feet by Fred W. Alexander, manager of the Pacific Lumber Inspection Bureau. This figure was an all time high. (Corresponding shipments in 1950 aggregated 3,166,380,892 feet.)

A group of New York and New England retail lumbermen visited the northwest calling on mills up and down the coast.

G. E. Karlen, lumber buyer for the J. E. Morris Lumber Co., Seattle, spent several days calling on Grays Harbor mills.

E. B. Chinn, manager Loggers Information Association went to Washington, D.C., where he urged that a tariff be placed on logs imported into the U.S. from Canada.

So much for the past. . . . In the Future, Try

Huss Lumber - Huss Plywood

HUSS LUMBER COMPANY

2301 North Racine Avenue .....CHICAGO 14, ILLINOIS

Left: Oyster bed stakes of West Coast hemlock from Fernley Long tree farm thinnings loaded on truck for shipment. Tops are left on to mark boundaries distinctly above water. Note young hemlock forest in background. Right: Gary Long demonstrates results from silvicultural point of view from thinning harvests in West Coast hemlock stand. In the Raymond area hemlock trees that have been "freed" by such thinning operations as those carried on by the Longs will soon grow wood to replace all that has been taken. The whole story of Fernley Long and the oyster corrals underlines the familiar moral: The practice of forestry has to be paid for, out of taxes or out of sales. Long harvests and sells to pay for his forestry.

HEMLOCK THINNINGS FOR OYSTER CORRAL

By W. A. TINNEY

FORESTER, FOREST CONSERVATION COMMITTEE
PACIFIC NORTHWEST FOREST INDUSTRIES

Foresters fairly agree that the time to begin thinnings in Western hemlock second growth—and in Douglas fir—is when the stands are from 15 to 20 years of age. This is not done as often as it should be, simply because there has been no economic use for such material sufficient to provide a money market. This principle has held true in almost every phase of private forest management. There is a Christmas tree market for little trees. There is a market for posts and poles. But the 15 to 20 year old hemlocks and firs—try and sell them!

Well, District Forest Warden Fernley Long did try, and he found a market for hemlock trees with trunks no bigger than tall, strong stakes. In the discovery he set what is believed to be a record for cash thinning returns.

Mr. Long sold, and continues to sell, thinnings from a stand of hemlock 15 years old as material for oyster corrals. This may sound like a fairy story but it is a true forestry story with bark on it. It demonstrates real thinning values.

The stand is on a 43-acre tree farm near Raymond, Washington, where Fernley Long is District Forest Warden for the State Division of Forestry.

The Long tree farm is located just a few miles from the excellent oyster beds of Willapa Harbor. The oystermen depend on seed imported from the Orient to keep their beds productive. This seed is shipped in during March and the oystermen work night and day getting it spread out on their beds. Then in about 18 months, if everything goes well, there is a crop of oysters all ready for the market.

Fernley Long and son Gary. Size of oyster bed stake may be gauged by the tree harvester's hand.

The oyster beds are alternately under and out of water, depending on the tides. When the tides are out, during seeding season, stakes are set in rows at regular intervals.

These stakes not only mark the boundaries of each oysterman's property, but also mark the rows for the seed—oyster corrals, no less!

The seeding is done from a boat when the tide is in, and these slim poles taken from the forest not only keep the oysterman from seeding someone else's beds but also help him distribute his seed evenly.

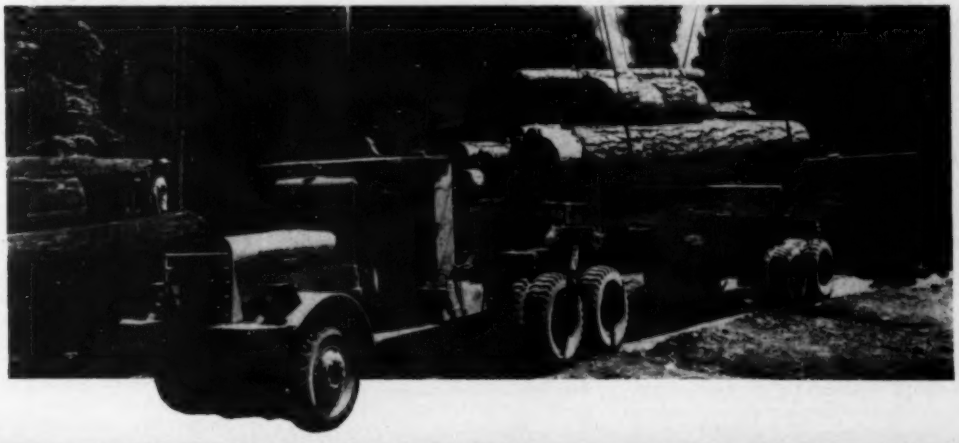
The oystermen have found that Western hemlock poles, about 20 feet long and from 1½ to 2 inches in diameter at the large end, make the best corral stakes. Hemlock is willowy and has other properties which resist better than any other pole wood the action of the waves. A couple of live branches are left at the small end of each stake to help the oystermen easily distinguish the stakes and rows as they do their seeding.

In the past, around Willapa Harbor anyway, they have sent their own crews into the woods to gather these stakes. This has proven very

(Concluded on Page 166)

a good RULE

It's a good rule to get the right equipment in the first place. Ask any Kenworth customer why. He'll tell you the proper engineering of a truck to fit the job for which it is intended is the most profitable investment he can make. Kenworth's specialized engineering means longer life, better performance . . . it avoids costly repairs and lay-off time . . . it mixes an ounce of prevention into every pound of perfection to increase the value—to your operation—of the truck you buy. Make it a rule to consult Kenworth for assistance in solving your particular transportation problems. That's the way you'll learn ***there's more WORTH in KENWORTH.***



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FACTORY AND HOME OFFICE: SEATTLE, U. S. A. DISTRIBUTORS IN THE UNITED STATES AND MOST FOREIGN COUNTRIES

PRACTICAL PHOTOGRAMMETRY

SHASTA FORESTS COMPANY, USING NEWEST METHOD IN SETTING UP DETAILED INVENTORY OF ITS NORTHERN CALIFORNIA TIMBER STANDS

Left to right: Paul Casamajor, in charge of photogrammetry; Inners E. Herrala, manager of the forestry department; and W. H. Price, general manager, Shasta Forests Co., Redding, Calif., watch the scales as a forest is being "weighed."

Photogrammetry—a word which even as recent as two years ago few foresters, to say nothing of loggers or lumbermen, hesitated to even pronounce. Now nearly everyone in the industry uses the word glibly. Photogrammetry, a subject which in December drew an attendance of several hundred to a San Francisco meeting, far in excess of what had been contemplated.

Photogrammetry is opening up a whole new field of technical forest service. For instance, just consider what is being done with it by a well known Northern California timber land owning and land management concern.

Ever try to weigh a forest? Sounds impossible, doesn't it? But that's just what Shasta Forests Co., Redding, Calif., is doing as it is engaged in what is thought to be the most detailed inventory of private forest lands ever undertaken in California, and possibly the West.

When Shafco, as the Shasta Forests Co. is known, is through, it will know more about the trees, range and brush land on several hundred thousand acres it administers in six Northern California counties than the amateur gardner knows about the rose bushes in his back yard.

When the survey or inventory is completed, Shafco will be able to run cards through tabulating machines and get the answers accurately to the questions most forest owners guess at. They'll know how many high risk trees they have, the volume per acre by species, and numerous other pertinent facts.

How is Shafco making this inventory? By photogrammetry. Photogrammetry is the interpretation of aerial photos and has been used for many years, but Shafco put a couple of new twists to it, as applied to forest management.

In charge of the photogrammetry for Shasta Forests Co. is Paul Casamajor, a graduate in forestry, University of California, who worked with Fairchild Aerial Surveys, and served in the Navy as a Photogrammetrist.

He came to Shafco in January, 1950, to start the program. His first job was to find out what techniques to use. The technique in the Pacific Northwest doesn't fit in California, nor that used in the East.

California has its own peculiar problems as far as interpreting aerial photos is concerned.

Some of the work had already been done by Hammon, Jensen & Wallen, consulting foresters, Oakland, who had covered about one-third of the holdings. To make the deal more exciting Shafco set up a deadline of March, 1951, to complete the inventory. Work started March, 1950.

Forest lands have already been divided into some 35 stand classes, ranging from fully stocked virgin stand of merchantable timber down to a young stand of scattered reproduction.

During the past winter Shafco had eight two-man teams in the woods taking quarter-acre sample plots within each of these 35 stand classes. Thus they obtained the average volume per acre and other characteristics in that particular stand class.

Every tree in these plots is described on a card. There are more than 6,000 quarter-acre plots and every tree down to 4" is described.

This information has been transferred to a machine record card so that now Shafco has thousands of these cards. The machine record cards are sorted by the unit and the first thing the interpreters are interested in is the species, diameter, etc., so that all information can be analyzed in any form, such as thrift or risk of trees, etc.

This information also gives the volume per acre by species and type for any one of these stand classes.

How many acres of these various 35 stand classes does Shafco have? This is where photogrammetry comes in.

Casamajor takes these interpreted aerial photos, puts the information on a base map on a uniform scale, and Shafco knows exactly how many board feet of each species of tree it has.

There were no modern maps for the entire area and so Casamajor mapped the Westwood Basin, and the area between Burney and Alturas, 2" to the mile. The total Shafco ownership falls in the boundaries of 130 townships.

The township maps are finally made, showing the boundaries of the stand classes and types.

Shafco has developed a special technique for the determination of acreages of the various 35 stand classes in the entire area and here is where "weighing" the forest comes in.

First of all the township maps are printed on uniform weight Ozalid

(Concluded on Page 165)

Portland Man to Head National Box Association

In the face of heavy current demands on the capacity of the wooden box industry, resulting in maximum volume within limits of available lumber supply, an obligation to assist in supplying defense agencies with information and to cooperate toward providing experienced consultants and staff assistance was recognized by National Wooden Box Association members at their annual mid-year meeting held in Chicago, January 25 and 26.

H. H. Pein, Pein Box Company Oregon Ltd., Portland and Tygh Valley Lumber Company, Tygh Valley, Oregon, was elected president. Officers reelected were first vice president D. A. McNeill, Jr., McNeill Lauff and McNeill, Thomson, Georgia; executive vice president C. D. Hudson, Washington, D.C.; and treasurer P. John Galbraith, John Galbraith, Philadelphia, Pennsylvania.

Newly elected were second vice president Morris Milbank of Rogue River Lumber Company, Grants Pass, Oregon, and third vice president Robert F. Miles of Rathborne, Hair and Ridgway Box Company, Chicago.

H. H. PEIN, of Pein Box Co., Portland, Oregon, who has been elected president of the National Wooden Box Association.

Successful Timber Bidder

Harris Pine Mills, Inc., Pendleton, Ore., was successful bidder recently on 29 million feet of timber in Wallowa national forest. Per thousand bid on some 18 million feet of Ponderosa pine was $11.10, $1.75 on white fir, and $3.50 on Douglas fir, larch and spruce.

memo from PAUL E. KEENEY

The other day a logger asked us to explain why ROPE MASTER BLOCKS have faster pickup with the lightest line tension. He says he can tell by lookin' but some people think he's giving them a line. Shape Does It all right and experienced loggers can tell by the appearance.

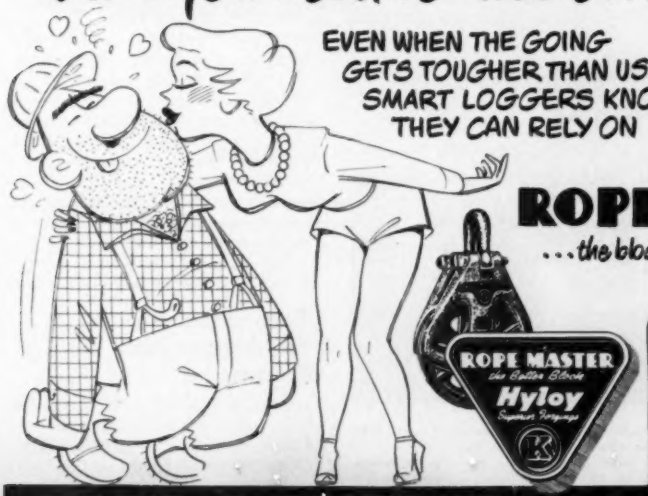
ROPE MASTER blocks were designed to solve the problem of a slack line suddenly jerked taut (the wire rope fouling in the sheave and often causing the block or line to break). Lighter weight by tubiform design and shape to pick-up the tension avoids binding and prevents rope from fouling.

Our logger friends working with these conditions day after day learn to sense the importance of design. That's why they can only explain ROPE MASTER by "Shape Does It".

Paul

When you need it most...

EVEN WHEN THE GOING GETS TOUGHER THAN USUAL, SMART LOGGERS KNOW THEY CAN RELY ON



ROPE MASTER
...the block that stands up best

ROPE MASTER-HYLOY DEALERS

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Crescent City . Pacific Engine & Machine Wks.
Redding . . . . . Stockton Iron Works
Stockton . . . . . Stockton Iron Works
San Francisco . . . Cal. Industrial Supply Co.

CANADA
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PAUL E. KEENEY CO.

Manufacturers of Rope Master Blocks and Hyloy Forgings

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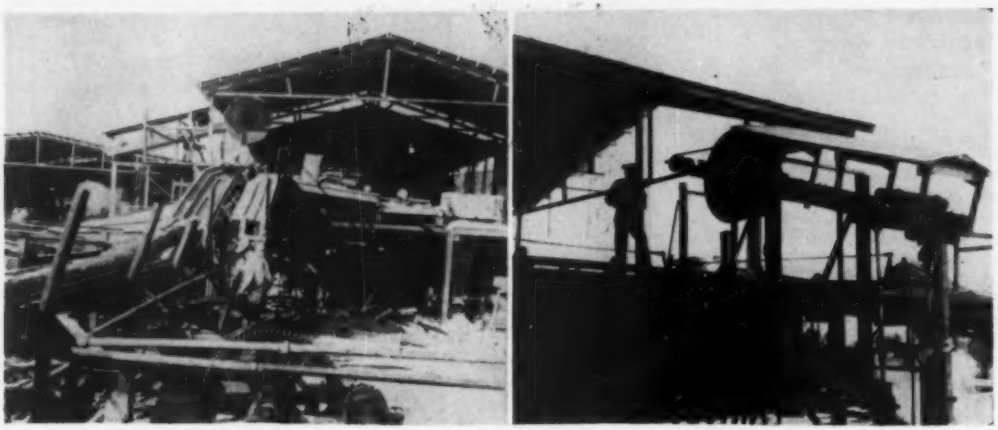


Two views of steam-activated log bucking saw at Dixon Lumber Co., Inc., Andalusia, Ala.

NEW SOUTHERN MILL BUILT TO HANDLE TREE LENGTH LOGS

Tree length logs up to 120 feet are being brought into the new sawmill of the Dixon Lumber Co. of Andalusia, Ala., in line with Solon Dixon's confirmed belief that this is the only economic way to log and haul the comparatively small saw logs from scattered tracts in the area; many of the logs being selectively cut out of naval stores operations.

Built to supplement the production of small mills in the woods, the Andalusia plant was designed to cut 40 to 60M′ per day when fully operating. Equipment includes a circular saw headrig; Wheland 9-saw trimmer; a circular gang saw for handling small logs, cutting a 2" board in the center and 1" boards on either side. Plans call for adding an adjustable top and bottom cutterhead on the small log gang. A new dry chain has thirty sorting chutes.

The sawmill is built one story in the air, on concrete base and steel supports, with a concrete deck.

One of the interesting things observed by The LUMBERMAN was the circular bucking saw for sawing tree-length logs to sawmill requirements. Located at the top of the log slip, it is activated by two steam cylinders, very much like a steam nigger.

Transportation of lumber by motor truck has, during the last few years, assumed tremendous proportions. Modern trucks and trailers now available, afford a dependable, fast and convenient method of moving manufactured lumber and other forest products from the mills to market. Shown here is one of Diamantine Bros. Transportation Inc., Peterbilt and Trailmobile lumber trailer units. Diamantine Brothers, Gilbert, Frank and James have been in the transportation business since 1934. They have been hauling lumber since 1939. Now they own and operate their own sawmill at Pt. Arena, Calif. In their fleet of lumber trucks they have 13 units—Peterbilt, Kenworth, and Sterling trucks, all powered with Cummins diesel engines, brakes are by Bendix-Westinghouse. Headquarters of the company, which hauls lumber not only from its own mill, but for other lumber producers all over California, is at Hayward, Calif. Beside seven Trailmobile trailers in the fleet, there are several Reliance semis and full trailers.

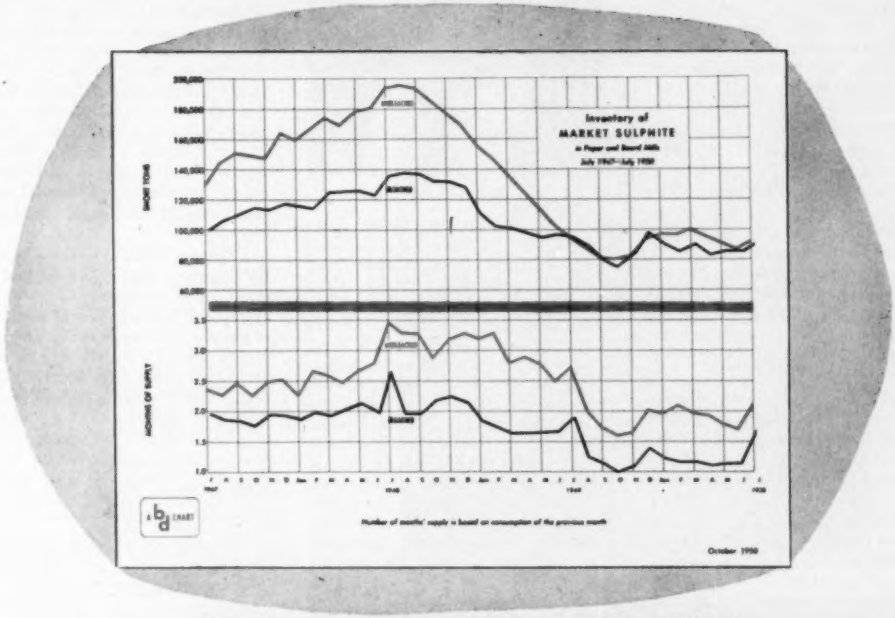
Record Output at New Zealand Sawmills

N.Z. Forest Products, Ltd., recently achieved what is believed to be a record in sawn lumber production when its daily output reached 171,832 super feet, or a rate of 44 million super feet a year, although not all the company's mills were at capacity. The new record was made possible through operation of the new gangsaw plant at Kinleith, which has been in operation for about three months, working two shifts. This is the largest sawmill now in production in New Zealand.

Record Bid for Ponderosa Pine Stumpage

Dant & Russell, Ltd., Redmond, Ore., acquired 4.5 million feet of Forest Service timber in the Deschutes National Forest at the highest price ever paid for ponderosa pine timber in the United States, according to officials of the forest. This record price was $51 per M, $19.30 above the appraised value set for the sale.

INTERESTING FACTS about wood pulp



This chart is Number 22 of a series published from time to time by the Bulkley, Dunton Pulp Co., Inc., presenting factual information about wood pulp, and is part of the service which our organization has rendered to the pulp and paper industry for well over a century.

If your Company is interested in the Wood Pulp market, we shall be glad to send you these charts and other pertinent information which may be of value to you.

BULKLEY, DUNTON PULP CO., INC.
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OREGON LOG TRUCKERS START SAFETY CAMPAIGN

The need and desirability of improving the safety record and public relations among truck drivers of the forest products industries were voiced by E. H. Crosby, manager of Columbia Basin Loggers, at the Governor's Safety Conference at Portland, Ore., in December. At that time he announced the beginning of an organized, state-wide program to provide safety education and training for truck drivers working in the logging and lumbering industries. Immediate aims are to get the truckers to police themselves in the matter of safety, speed, overloads, and other types of activities which antagonize the public.

This movement has been under active study for two years, according to Mr. Crosby. He says, "The offenders who give the entire log industry a bad name are very few compared to the total number of our trucks on the road. But the growing public feeling of antagonism to all trucks requires that our house be put in order, which is a job the lumber industry itself can do better than anyone else."

Already all log and lumber haulers licensed in the state—over 6000 licensees—have been asked to cooperate in this program and contribute a nominal amount to finance it.

The organization had a meeting of its district governors in Portland February 3, 1951, when a permanent non-profit organization was established and temporary officers elected; Officers: President, Nat B. Guistina, Guistina Bros., Eugene, Ore.; Vice-President, Allan Smith, Coos Bay Lbr. Co., Coos Bay, Ore.; Sec.-Treasurer, Robert Dwyer, Dwyer Lumber Co., Portland, Oregon; Asst. Treasurer, Robert Baker, Oregon Piling Co., Portland, Oregon; Chairman of the Executive Committee, E. H. Crosby, Mgr., Columbia Basin Loggers and Sawmills, Portland, Oregon; Board Members, T. J. Starker, Dogface Lbr. Co., Corvallis, Ore., Claude A. Davis, President, Southern Oregon Truckers League, Medford, Oregon, Fred Endicott, Wm. Endicott Logging Co., Prineville, Ore., Hugo H. Wiecks, D & W Co., Tillamook, Oregon.

E. H. CROSBY

The number of districts have been increased to 19, and the entire state is now included under the program; each district will elect its own governor and an alterate; and this board of governors will elect from within itself an executive committee. The paid staff will consist of a manager, one to three safety engineers, and one office girl as secretary-clerk.

Robert H. Williams was employed as promotion director, and Mr. J. L. Curtis as safety engineer. These men in company with Mr. F. E. Landsburg, Director of the Interstate Commerce Commission, Captain Walter Lansing, Oregon State Police, and at different times, Mr. William Jones, Charles McBee, and Otto Pitcher, of the State Industrial Accident Commission went to Tillamook, Prineville, Medford, Corvallis, Eugene, Portland, and Coquille where meetings with nearly a thousand interested lumber and log truck drivers were held.

Regarding the present situation Mr. Crosby says, "Officials of our state agencies charged with the safety and convenience of the public recognize that responsible members of the industry are willing to abide by proper rules of conduct and recognize the rights of others on the highways. However, in the absence of some sort of a self-policing program and aggressive action on the part of the industry as a whole these officials feel something must be done to correct abuses.

"A program of education, self-regulation, control, and public relations has been worked out."

Logging truck drivers will be asked to subscribe to this pledge:

"One—To observe the Golden Rule in all my driving;

"Two—To obey all state laws and regulations for the driving of log trucks;

"Three—Never to drive equipment which is unsafe or unsafely loaded;

"Four—To cooperate with following traffic wherever physically possible;

"Five—To avoid accident-producing situations."

Private road truck hauling of logs by Western Logging Co. at Valsetz, Ore., results in king size loads, as evidenced by the above photograph taken by Harley Blanchard, yarding donkey engineer of this operation. Here is a 25,804-foot, 6-log load on Peterbilt truck and Wentworth & Irwin trailer. A 200 h.p. Cummins diesel engine powers this hauling unit. The company-owned truck and trailer have 13-foot bunks and ride on Goodyear tires. This load and equipment was estimated as weighing 103.5 tons.

Record O & C Timber Sales

1950 was a bumper timber sale year for the Bureau of Land Management in Oregon, Washington and Idaho with total sales of almost $7,500,000. A total of 452 million board feet of O & C stumpage in Western Oregon brought $6,913,000—an average of $15.30 per thousand board feet.

TEXAS LUMBERMEN TOLD OF WAR EMERGENCIES

While there exists today no doubt but that lumber is in plentiful supply this situation will change before the close of 1951 as conditions created by the defense effort come to bear on the forest products industry; lumber supply in general may have appearance of ampleness yet critical shortages be experienced in certain items.

Lumber production achieved in 1950 cannot possibly be duplicated, during 1951 when the impact of military procurement in manpower and equipment, to be felt in the not too distant future, is sustained. Trucks and tractors will be hard to get; all supplies involving use of steel, copper, rubber and aluminum hard to get.

Criticism has been heard of the inclusion of lumber on the "critical" list when it is in good supply as of today but the combined factors of military demand for lumber itself and restrictive factors applied to its production make it imperative that means be provided for the industry to share pro-rata in distribution of such vital supplies as trucks, tractors, tires, etc. Unless lumber were on the critical list, the industry would experience the same difficulties as in World War II.

The foregoing information was presented by Hal E. Holman, chief, Forest Products Division, National Production Authority, U.S. Dept. of Commerce, to over 100 members of the Texas Lumber Manufacturers' Association in a meeting near Lufkin, Texas, on Feb. 10. Formerly a well known figure in the forest products industry, Mr. Holman spoke on familiar terms to the lumbermen.

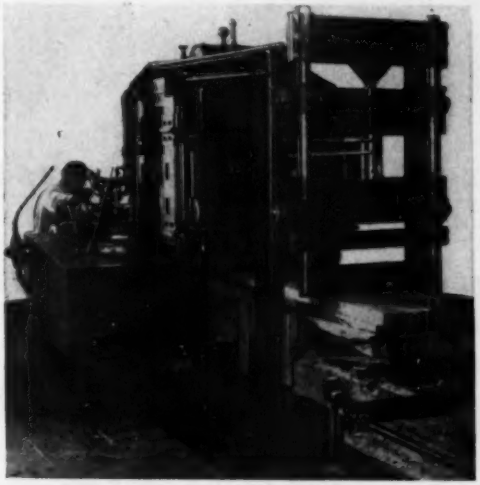
He told them to evaluate their operations on the basis of minimum production; and, to carefully husband all of the equipment they now have on hand. He started out by saying lumber must be evaluated in its own relationship to the economic structure; that it must make its requirements known; and that industry must come in and help develop the program.

Military demand, he indicated, will include material required for PT boats, crash landing boats, mine sweepers. This means high specification materials for planking and marine plywood, both of which come from the same log. The problem of keels he said will be solved by laminated white oak instead of trying for hard to find single lumber pieces. In this, clear sections from low grade logs may be used to build up the desired high grade strength items. This will be effected through utilization of facilities provided by dimension and furniture plants.

Mr. Holman discussed the use of informed industry men through their appointment to committees. The current dislike for $1/year men evidenced from experience of World War II will be met by appointment of PWC men who will draw transportation costs, per diem of $15 per day and come to Washington "on call" but permitted to continue to stay with their company and be carried on company payroll.

Prior to Mr. Holman's talk, the defense problems were discussed at length by B. J. Edens, presiding chairman; Russ Eagle, chairman of Southern Pine Ass'n. industry committee; Peter Gaffney and S. E. Mounes, of Southern Pine Association; and speakers from the floor.

Mr. Gaffney presented a detailed report of the many steps taken by Southern Pine Association to keep pace with the defense effort situation.



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Officers of Pacific Northwest Section, Forest Products Research Society—Clarence Stone, Elliott Bay Lumber Co., Seattle, Wash., retiring chairman; Dr. Harvey Erickson, college of forestry, University of Washington, and Carl Castle, Dow Chemical Co., Seattle, elected vice chairman and chairman, respectively.

INTEGRATED MANUFACTURING AIDS UTILIZATION OF MATURE FORESTS

At the annual meeting of Pacific Northwest Section of Forest Products Research Society, held Feb. 6 at Corvallis, Ore., consideration focussed on means and methods of furthering utilization of the forest crop. Robert P. Conklin, assistant to the manager, Weyerhaeuser Timber Co., Springfield, Ore., spoke on integrated manufacture as an aid in managing over-mature forests.

Mr. Conklin's paper takes on the problem faced by owners of over-mature Douglas fir timber such as confronted his organization in managing its timber located on Western slopes of Cascade mountains in Oregon.

Old, original cruises showed 60% of the stands as too decadent to log, and minor species were but little mentioned. Years of investigation were required to determine what to do with these over-mature stands where diseases of old age were "reducing the forest inventory faster than were fire and logging combined."

The subsequent problem was to find methods of conversion and markets for items obtained from the over-ripe trees. Markets were found for the low grade shop and industrial grades of lumber.

A breakdown sawmill and a remanufacturing plant for recovering highest values from the sawed cants were designed. Utilization plans were enhanced by kraft pulp mill and container board plant using as raw materials chips from sawmill by-products, and from stained and doty wood. Utilization plans were further intensified by recovery of up to 98% of chemicals through burning concentrated waste liquors. A modern power plant was designed for using sawdust and other wood not suitable for pulping, thus providing steam and electric power for these integrated plant units, and dry shavings utilization to be obtained through pressing into fuel logs.

Thus developed, the plan for integrating new plant operations to be built at Springfield, keeping economic considerations ever in mind. With completion of forest management plan, the designed plants were built.

A test was subsequently made on a tract of previously logged land. This "timber liability," purchased for the study, was converted into an asset which produced in the integrated plant the following products (per acre): 15.2M board feet low-grade saw logs, .6M bd. ft. hemlock suitable for pulp, 45.1M bd. ft. fir "wood logs" suitable for pulp chips —a total of 61,020 board feet per acre.

Dr. Kurth reviewed results obtained by Oregon Forest Products Laboratory's 3 years work on investigating chemical composition and utilization of Western tree bark.

Dr. Kurth states, "It is believed, from work done during the past two years on integrated extraction processes, that all of these chemicals may be produced from sawlog bark, and the extracted bark residue can still be used further for fuel, as soil conditioners, in destructive distillation, or for the mechanical separation of cork, bast fibers, and other bark products."

W. C. Ring, laboratory assistant, Long-Bell Lumber Co., Longview, Wash., delivered paper entitled "The Control of Moisture Content in the Manufacture of Kitchen Cabinets and Similar Fabricated Products from Softwood Lumber," co-authored by himself and A. L. Mottet, Long-Bell research director.

M. D. McDonald, wood technologist, Oregon Forest Product Laboratory, told of that organization's findings concerning "Compression of Douglas Fir Plywood During Hot-Pressing." He says this compression results normally in loss up to 15% or more of usable peeler log volume through the practice of thickly cutting veneers to allow for subsequent compression.

Wood-gas turbine research was discussed by George Atherton, mechanical engineer who is conducting this project at Oregon Forest Products Laboratory. He lists advantages of the wood-gas turbine as source of power in a sawmill as follows: Fuel in form of sawdust or hog fuel would be inexpensive and in some cases eliminate or diminish the disposal problem; eliminate the usual water supply system needed for steam power plants; eliminates boiler feedwater conditioning, pipe and auxiliaries; occupies much smaller space than required for other power plants; and lighter weight.

Officers for the coming year were elected as follows: Chairman, Carl Castle, Dow Chemical Co., Seattle, Wash.; Vice Chairman, Dr. Harvey Erickson, college of forestry, University of Washington, Seattle; Secretary-Treasurer, Carl Rasmussen, director of Western Pine Assn. Laboratory, Portland; and E. W. Wellwood, Canadian Forest Products, Ltd., Plywood Division, New Westminster, B.C., trustee.

Technical session participants at the annual meeting of Pacific Northwest section of Forest Products Research Society held at Corvallis, Ore. Left to right, William J. Baker, Chief of Research, Oregon Forest Products Laboratory; Robert P. Conklin, assistant to the manager, Weyerhaeuser Timber Co., Springfield, Ore.; Dr. E. F. Kurth, chief of chemical utilization service, Oregon Forest Products Laboratory; W. C. Ring, Long-Bell Lumber Co., Longview, Wash.; M. D. McDonald and George Atherton, both of Oregon Forest Products Laboratory.

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STATES: Utah, Oregon, Idaho, Montana, Colorado, Arizona, South Dakota, Wyoming, California, Alaska, Washington, New Mexico, British Columbia, Mexico, Philippines, Southern States (Plywood Section).

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B C Truck Loggers

(Concluded from Page 147)

terest in the question of government timber sales; how they are made, and what yardsticks the forest service uses to determine what timber should be sold and how and for how much.

E. W. Bassett, district forester with headquarters in Vancouver, in charge of British Columbia's all-important Vancouver district, including the coast and all Vancouver Island told just how a logger should make an application for a specific stand of timber and the procedure he should follow right down the line until the forest service finally offered the property for public sale. As an instance of the volume of timber sales in that district, Mr. Bassett pointed out that during the calendar year 1950 740 million feet BM. were sold by the government at a total price of $4,427,000.

Average stumpage returns in the Vancouver district for the year 1950 Mr. Bassett quoted as follows: Fir, $7.96 per thousand; cedar, $6.63; hemlock, $3.43; balsam, $2.40; spruce, $3.69.

"Loggers and others still speak in terms of an open market in British Columbia but actually there is no such thing today," said Mr. Bassett. "Practically every logger has got some tieup with a processing plant, and when we deal with applications for timber purchase we are dealing almost invariably with a combination of logger and millman who wish to jointly acquire the stand, each one making concessions to insure a satisfactory deal."

H. C. McQuillan, Tofino logger and head of the company bearing his name, asked if the government would lower its sale prices on timber disposed of under long-term sale if the market receded during the life of the contract. To which Mr. Bassett replied that if the market varied 20 percent from the original base within a three month period then the price would be subject to revision.

Deputy Minister of Forests C. D. Orchard explained that long term timber sales by the government were not made simply as a means of facilitating payment, but to meet physical conditions in the forest involved. In some cases certain timber could not be sold at all unless the buyer had some special inducement because it would be too difficult to log under normal conditions; to be logged at all it would be necessary for the logger to pick his own time.

Naval Stores Price Support Increased

Price Support For Gum Naval Stores products at first hand level is being increased to 90 percent of parity to encourage greater production for defense purposes. The price will be either that at current levels or according to costs to be computed on April 1, the higher level being selected. The 1950 guarantee level was sixty percent parity. The currently estimated 1951 support level based on a unit of 50 gallons of turpentine and 1400 pounds of rosin is $122,54 compared with $86,-82 in 1950. The initial support rates would be 50¢ per gallon in bulk for turpentine and not less than $6.97 for 100 pounds of gum rosing grading "G" or above. Production of gum naval stores is an important forest income factor in the longleaf and slash pine timber belt extending along the gulf coast and south Atlantic coastal area. Bleeding of the trees for gum naval stores products is effected ahead of felling for logs or other woods uses.

Some of the main considerations, among Baier boom boat users are: low hull upkeep; long life of these boats, and reasonable original cost.

Only $10 per horsepower

Lee Bloom's portable mill near East Stanwood, Wash., uses a Chrysler Industrial Engine to drive the 52" saw.

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That's how Lee Bloom figures the cost of his 113 HP Chrysler Industrial Engine purchased from Evans Engine for $1133.00. With this economical buy he gets dependable power at all times with plenty of reserve to keep four men busy turning out 10,000 BF of rough dimension per day.

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Crown-Zellerbach Restocking 4200 Acres This Season

When Crown Zellerbach's seasonal forest restocking program is completed in April, more than 4200 acres will have been planted to tree seedlings or sown to tree seeds from helicopters, according to Chief Forester Clarence Richen.

Helicopter seeding involving the sowing of 2,274 acres was completed in November. Hand planting, which began in November, is continuing on five of the eight Tree Farms of the Corporation. The program calls for planting of 1,940 acres, of which 1,070 acres has been completed. Sitka spruce, White fir, Noble fir, and Douglas-fir totaling 873,000 trees is required for the program.

One man can plant, on the average, one acre a day. A planting crew is composed of about 12 men and a forester as planting foreman.

Likely the least-noticed, but actually one of the most progressive forestry steps on Crown Zellerbach's Clatsop, Ore., properties, is the snag-felling project in the Elsie block, now entering its fourth year. Already about 38,000 snags left from the old Wolf Creek burn have been felled on 4,700 acres. Of these about half had some merchantable values, the balance being entirely worthless.

Under direction of Bert Ross and supervision of Forester Jack Grant, eight private contractors have crews dropping the snags. The 4,700 desnagged acres are restocked by hand-planting and aerial seeding.

Forest Inventory for Wisconsin

Twenty-seven of Wisconsin's 32 forest counties already have agreed to cooperate in the state's program of making a complete forest inventory and by official action are pledged to contribute to the cost of the program.

Work on the forest inventory has been underway since July and is expected to be completed in two more years. The inventory is based on interpretation of aerial photographs and ground sample plots leading to a computation of timber volumes, rate of growth and the volume and products which should be cut annually.

New South Carolina Plant

(Concluded from Page 74)

on the progressiveness of the farmer. Our future lies with co-operation with the farmer to get him to grow the best timber possible and to pay him the best price we can. Few farmers will now sell here before they have a public agent come in and give them an estimate of timber value."

(Left to right): Lars J. W. Dalman, managing director, Soderhamns Verkstader, AB., Soderhamn, Sweden, and Greeley McGowin, of W. T. Smith Lumber Co., Chapman, Ala., photographed at the Greenville plant of the lumber company. Mr. McGowin recently joined the company after finishing Oxford (England) followed by a tour of forest product activities in Europe. Mr. Dalman's company is producing a new type of hydraulic barker. It is understood several large lumber companies in Alabama and Arkansas, and elsewhere in the South, are considering installation of log barkers in conjunction with paper mills that will receive the barked slabs.

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Speedy cutting in all kinds of timber! Steady, trouble-free performance day after day! Quick, easy, correct filing by the operator, right on the saw bar!

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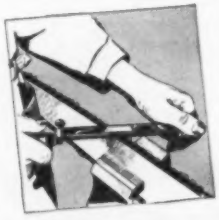

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8816 S. E. 17th Ave., Portland 2, Ore.

Practical Photogrammetry

(Continued from Page 154)

paper, and the weight of the paper doesn't vary. Then the individual stand class shapes are cut out with a knife, and sorted by stand class. Then these stand class "cut-outs" are weighed on an analytical balance which has a sensitivity of about "one-acre."

Counter-weights are made from the same run of paper from which were made the original prints, in sections, half sections, quarter sections, down to 10 acres and the nearest acre.

When the scales balance Shafco knows exactly how many acres of individual stand class there is in each township.

The Shafco Holdings

The lands of Shafco lie in Tehama, Plumas, Lassen, Shasta, Modoc and Siskiyou counties, and are owned by the heirs of T. B. Walker, founder of the Red River Lumber Co., Westwood, Calif., and his partner, Hamlin Andrus.

Shasta Forests Co. was incorporated in December, 1947, to negotiate and administer the sale of forest products from these ownerships. Brooks Walker is president of the corporation; T. S. Walker, vice-president, and Walker Smith secretary-treasurer. They represent three branches of the Walker family.

General manager of Shafco is William H. "Bill" Price. Price was formerly forest manager for Weyerhaeuser Timber Co., Tacoma, Washington, and was the originator of the nation's first tree farm when he put together the 155,000-acre Clemons Tree Farm for Weyerhaeuser.

"The purpose of this inventory," Price told a LUMBERMAN field editor, is to show how the lands should be logged and managed for the future. We are striving to operate the forest so that 20 years from now we can go back and take out at least five thousand board feet to the acre. We are taking out the over-mature now in the virgin forest, and saving the thrifty."

The manager of Shafco's forestry department is Inners Herrala, a graduate forester from Washington State College. He was formerly with the U. S. Forest Service, Pacific Northwest Forest and Range Experiment Station in Portland, was with Weyerhaeuser Timber Co., Tacoma, Wash., and worked under Paul Keen, noted authority on tree classifications and Forest Service entomologist. Keen, incidentally, has done considerable research work for Shafco.

Lands Are Productive

Shafco is not only growing and managing trees for the future but is simultaneously harvesting from its scientifically administered lands a large volume of timber.

Among purchasers of Shafco administered timber are Ralph L. Smith Lumber Co., and Shasta Plywood Division, U. S. Plywood Corp., both of Anderson, Calif.; Fruit Growers Supply Co., Westwood; Paul Bunyan Lumber Co., Susanville, and Cheney Lumber Co., Greenville, and many others.

Both the Ralph L. Smith Lumber Co. and Shasta Plywood purchased timber from Shafco under 20-year cutting rights, to be logged in two-cycle cuttings. First time over took out the high risk timber, such as spike tops, defective, over-mature, insect killed, etc., about 40-50% of the volume.

The second cutting cycle is planned to take out the remaining merchantable timber cutting down to 21" DBH. Substantial residual growth will be left in all areas for continued harvest in the future.

Timber to be harvested is marked by the forestry department staff, using both the Paul Keen and the Duncan Dunning methods for tree

EVERETT ROACH, filer for Danebo Lumber Co., Eugene, Oregon, at the Armstrong No. 22 gang saw sharpener.

SHARP SAWS mean faster production and higher production.

Armstrong filing room equipment means sharp saws.

Armstrong equipment is precision equipment . . . the finest available. The kind of equipment that brings profit dollars back into your firm. Investigate today.

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Founded in 1902 by E. P. Armstrong

risk marking. The foresters, using a paint spray gun, mark trees and tally them according to tree class, DBA, and species.

Beside the land, office management and forestry departments, there are four inspectors under Price, a cruiser, surveyor, and check scaler. During the logging season there are 30 to 50 scalers, the scalers jointly paid by the timber purchaser and Shafco.

The timberlands are divided into four supervisory districts, each district administered by an inspector—W. P. Bayles, Susanville; K. E. Shea, Fall River Mills; W. B. Beaty, Redding; and H. S. Brown, Mineral. The inspectors have charge of all activities within their districts and report directly to the general manager.

The check scaler trains and instructs the regular scalers and inspects their work. Usually the timber purchaser has his own check scaler also.

But not all the activities of Shafco are devoted to the supervision of the production of saw logs or peelers.

Multiple Land Use

Multiple use of the land is being developed to include recreation, grazing, public campgrounds, Christmas trees, poles, posts, firewood, etc..

Recreation lands for development have been selected around Lake Almanor, and many areas along the highways are suitable for camp sites for tourists. Some of these areas have already been prepared in cooperation with the California Division of Forestry, and are being used by campers. The state develops and protects the area but title to the land remains with Shafco.

There are thousands of acres suitable for sheep and cattle grazing, and the land is being improved by ditching for water supply and drainage. Harvesting of Christmas trees accounts for a sizeable part of the total income from the forest lands. Volume of the cut and cutting areas have been designated by company foresters with the idea in mind of improving timber stand by thinning out some of the heavily crowded smaller trees.

Some 52 people are regularly employed by Shasta Forests Co., making it one of the largest forest land management groups in the country.

Hemlock Thinnings

(Concluded from Page 152)

expensive, hard on the young forests too, because the oystermen are notoriously poor woodsmen.

Fernley Long, who is also very active as a Pacific County committeeman of the More Trees for Washington Program, decided last year that he and his son could supply these stakes in their spare time.

Since his hemlock reproduction was too thick, he decided that even though no one else had ever tried it, he could thin this reproduction, furnish the kind of stake the oystermen wanted, and at the same time make some money.

Warden Long finally wangled a pilot order on the basis that he could produce an oyster stake at half the money the oystermen had been paying.

In early March last year, Fernley and his son, Gary, went to work. The first day they averaged $30 each by cutting over 400 stakes. The upshot of the thing has been that the return per acre has averaged approximately $240. A return which certainly must establish a world's record for a cash return in thinnings from a 15-year-old hemlock stand.

Let me hasten to state I do not recommend that you run out and buy stands of 15-year-old Western hemlock reproduction. The oyster corral market is only seasonal and the number of stakes used annually isn't too great.

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Left, Dr. J. A. Hall. Right, Robert W. Cowlin.

Hall To Direct Forest Products Laboratory

Dr. J. Alfred Hall, Director of the Pacific Northwest forest and range experiment station, Portland, Oregon, since 1945 will become director of the Forest Products Laboratory at Madison, Wisconsin, April 1. New head of the Portland station will be Robert W. Cowlin, at present in charge of the division of forest economics there. He has been with the station since 1929.

Hall succeeds George M. Hunt who retires as head of the laboratory after 40 years with the U.S. Forest Service. He is internationally recognized for his contributions in wood research. He is noted for his studies dealing with wood preservation, painting, glueing, and fireproofing.

During World War II Dr. Hall was a special consultant in the Washington office of the Forest Service. He played an important part in the establishment of the wood waste alcohol plant at Springfield, Oregon, and the sulphite waste alcohol plant at Bellingham, Washington.

Seeks Shade and Blind Stock

G. Bolotin, of the Clopay Corporation, Cincinnati, Ohio, was a recent western visitor. Mr. Bolotin was in the West lining up a supply of lumber for his firm, which manufactures blinds and shades. His company, he said, is a large user of lumber. It likes to buy short stock similar to handle stock, 1x1x37. Mr. Bolotin told The LUMBERMAN that the installation of chipping plants at sawmills unquestionably is diverting material formerly sold to such concerns as his, to chips. His firm uses fir, pine, spruce, hemlock. He said that a number of mills had found this business good business and that it enables a mill to practice very close utilization.

writes
MR. E. L. FERIS,
Logging Contractor
of Woodland,
Washington

"WE TREAT 'EM ROUGH" he continues, *"hauling logs to mills over all kinds of roads, in all kinds of weather—and we've learned we can count on Roberts' Service Department to keep our 7 trucks in first-class shape. Every job has been completely satisfactory, and fast too, which is important in our operation."*

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MILLIONS OF FEET OF UNUSED WOOD RESOURCES AVAILABLE FOR INDUSTRY IN WASHINGTON

Nearly 210 million cubic feet of unused wood resources are available annually in the State of Washington. This is equivalent to three million tons of dry wood. Enormous as is this pile of leftover wood, it is shrinking a bit every year as more and more industries nibble away at it. The lumber demanded during World War II for cantonments, crating and dunnage, and then for housing, brought to the sawmills many short and low-grade logs that used to be left in the woods. Resourceful loggers have worked over old slashings and salvaged short, clear chunks for peeling into veneer, "peewee" sawlogs, and thousands of cords of useful pulpwood.

Proof that the logger and mill operator are making money handling this material is that 26.4 per cent of the total wood volume used in Washington pulp mills in 1948 came from salvage logging, mill residuals and intermediate cuttings of immature stands. This volume of wood represents about 400,000,000 board feet. Every day the mills are turning more and more to this once overlooked resource, as evidenced by new chipping units at sawmills, new kraft pulp mills, fiber board plants, a wood flour installation and rapid development of such items as veneer chippers, slab barkers and sawdust granulators.

New technologies are constantly digging into Washington's wood pile. The synthetic board, made from tiny wood fibers pressed and molded into sheets, now comes out from one part of a mill whose head-saw may be cutting virgin logs into heavy timbers for construction. Some fiber boards are thick and soft, for insulation. Some are thin and hard, for sheathing buildings. And some, called "acoustic tile," are treated and pierced for interior finish to deaden sound.

A War Production plant at Springfield, Oregon proved out the Scholler process of converting wood into industrial alcohol with a yield of 55 gallons of alcohol from a ton of Douglas fir sawdust or shavings. The unused wood of the West Coast can float a couple of Uncle Sam's battleships in alcohol whenever the national economy needs it; and this source of fuel, food, and rubber may have special importance as the country again faces the realities of national existence.

Another necessity of war days led to a new industry. Shortage of cork from the Mediterranean started the shredding of Douglas fir bark, to recover its thin layers of little corky flakes. One company ended up by processing all the bark into fiber, plastic powder and fertilizer.

But while shrinking perceptibly from year to year, the annual accumulation of wood leftovers in Washington is still of astronomical proportions. It is the state's greatest industrial challenge. When the legislature set up a Commission on Forest Products in 1947, the attack on the wood pile became its No. 1 job. The Commission organized a state-wide survey of unused wood. Twelve districts covering natural economic units of transportation and manufacture were marked out on the east and west sides of the Cascades. Survey crews sampled the slashings left in logging operations in every major timber type and got the best records to be had of mill residuals at every sawmill, plywood factory and wood-working plant in the state. This new-style timber cruising has been assembled and printed on a forest-industry map of Washington. The figures are broken down by species, sizes and qualities of wood—from the sawdust and shavings of a planing mill to the big chunks of defective cedar or

No. 3 cedar log 11 inches by 14 feet.

Douglas fir peeler block 54 inches by nine feet.

No. 3 hemlock log 33 inches by 20 feet reduced to 14-foot length because of rot in one quarter.

hemlock left in the woods. One item of special interest is the volume of tall slim poles standing thickly in 40 and 50-year Junior forests. Many of these over-crowded woods should be thinned of surplus trees before they die in nature's race for survival.

It is all useful wood; wood accessible to roads and going logging shows; wood of the kinds now manufactured wherever there is a market to take it and a plant to use it. It is located on an average, 32.7 miles from market, with a transportation cost of 3.7 cents per ton mile. It adds up to 210 million cubic feet available every year—a continuing crop of raw material waiting for industry to harvest it. Over half of this wood is logging slash, the leftovers after saw timber has been cut under usual practices. In the thickest stands of Douglas fir, the wood left behind the logger runs up to 30 cords an acre. The unused mill residuals, the slabs and edgings and trmimings, the sawdust and shavings also make up a respectable wood pile of their own. They could pour 46 million cubic feet a year into the bins of new pulp or fiber or wood-sugar plants.

From the days of John McLaughlin's sawmill near Vancouver, Washington, set up by the Hudson Bay Company in 1823, West Coast forest industry has struggled under a great over-burden of useless wood. This condition is exemplified by a gloomy tale from an old Columbia River timber cruiser. "No use tallying this cursed hemlock," he said. "No logging boss will touch it ceptin' an extra big clear trunk." The patches of second growth were all classed as "brush" by this census taker of the woods. But he would count the half-mature trees of "Bastard fir." "No floorin' or finish in it; but good stout timbers," he said.

For many years, the West Coast lumber mills existed precariously by muscling into eastern markets with the choicest grades cut from virgin logs. They alone could repay the freight haul across the continent. The leavings in the woods appalled every lumberman or forester from other states or other lands. At a meeting of distressed lumbermen in the 20's an operator from Wisconsin complained of the low-grade logs he had to leave in the woods because the glutted market would not repay the cost of saving them. The dean of the Douglas fir contingent closed the argument by remarking that an average acre of Northwest logging slash contained more wood than any acre of eastern forest ever grew. At that, it is doubtful if all the leftovers from pioneer western logging and milling ever caught up with the wastage of virgin timber rotting on the stump from old age and overripeness.

The greatest progress of forest industry in the Pacific Northwest from decade to decade has been its slow gains in mastering its vast surplus of marginal raw material. The markets for wood created by new industries, by the pulp and plywood mills, by the fiber-board and chemical plants, influence directly what the logger and forester can do in their woods. The hemlock which was the despair of the old cruising is now a principal source of rayon yarn, the second textile in national consumption. Giant beams stronger than the solid timbers sawn from virgin logs are made today by gluing one and two-inch boards together. The integrated manufacture of many different things under one management, of lumber, plywood and kraft pulp from the same tree makes the leavings from one product raw material for another. And every new use of wood, for textiles or paper or plastics or ersatz hamburger, puts a stronger economic footing under permanent forest management.

All of which may point up the interest which Washington forest men take in the piles of idle wood still lying around our state or rising skyward every fall in the smoke of our slash fires. More pulp and fiber mills, more plastic and chemical plants are needed to use all that our forests grow and to convert these piles of unused wood into production and payrolls.

There is a sawmill in the Okanogan Valley which well illustrates why all the people of Washington have a stake in the complete use of the timber crop. This mill saws 50 million feet of pine logs every year; but, except for its own community, has no lumber to sell. Every board is cut or glued or laminated into a knocked-down casket, a window frame or sash, a table or chair, a kitchen cabinet, an ironing board or any one of a dozen other things for everyday use. Every scrap of wood goes into something. The latest device of these resourceful millwrights is a special sawing rig for utilizing the forest weed of the West, the lodgepole pine whose little trees clothe millions of acres in our high country. Lodgepole logs, 90 inches long and 4½ inches or thicker at the top end, tumble down onto a moving chain cradle, and are split and resplit into little boards by a thin, fast horizontal band saw. They emerge from the plant edge-glued into panels or laminated into squares and then turned on a lathe into piano legs.

The most impressive thing about this plant is not the mechanical marvel of its machines but its army of skilled workers. From every thousand feet of logs felled in its woods, it creates more than double the man-hours of labor at the usual western sawmill of the old style.

Employment is one of the riches hidden in the unused wood piles of Washington.

Latest News and Developments in the Machinery and Equipment Field

Appointment of two California men as regional sales managers of Fruehauf Trailer Co., has been announced by C. L. Schneider, vice president in charge of sales. Named were E. C. Henning (right), Oakland, Calif., who will supervise sales development for the world's largest truck trailer manufacturer in a division including Fruehauf-owned branches at San Francisco, Oakland and Sacramento, Calif.; Portland, Ore.; and Seattle and Spokane, Wash.; and A. V. Tice (left), Los Angeles whose division includes sales and service branches at Fresno, Los Angeles and San Diego, Calif., and Phoenix, Ariz.

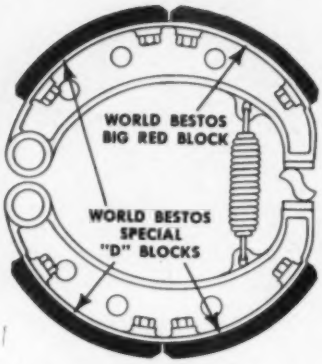
H. R. Dennie, recently appointed manager of the Star Machinery Company's Spokane, Wash., branch. In addition to being manager Mr. Dennie specializes in the sale of woodworking equipment.

In New Enlarged Quarters

The Pacific Saw & Knife Company recently moved into their new building at S.E. Ninth and Stark Streets, Portland. They have doubled the size of their plant. Of interest to plywood manufacturers is the fact that this company has complete modern facilities for repairing carbide tipped saws, which are important to plywood manufacturers. They maintain a separate department to insure prompt service and shipments on all types of their new carbide tipped saws.

Buys New Logging Equipment

M. F. "Slim" Malvich, Chester, Calif., logger, recently took delivery of two Allis-Chalmers HD19 tractors, purchased from the Moore Equipment Co., Sacramento and Stockton. They were equipped with Carco winch, Carco 'dozers. Slim also bought an Allis-Chalmers AD4 diesel road grader, and another GMC 979 logging truck from the same company.



World Bestos "Red Block"

Less than a year ago World Bestos announced Red Block in the "J" combination, an entirely new high-friction brake block for heavy duty trucks and trailers—guaranteed to eliminate brake fade regardless of heat, water or abusive driving conditions.

Fleet owners and operators the nation over, equipping their rigs with Red Block, actually discovered that Red Block *couldn't fade*, even under the most severe treatment. Proved to themselves that Red Block ended heat-checked drums, gave improved brake performance, longer brake life with lower per mile operating costs.

Below World Bestos tells what these men learned by actual experience—hauling heavy loads over thousands of miles of mountainous, rolling or flat country.

"Red Block in the 'J' Combination Retains Full Friction Even at Red Heat. A completely new approach to the fade problem, Red Block actually retains full friction as drum temperatures go up—instead of losing it and 'fading out' as ordinary brake blocks do at about 600 degrees F. and above. Red Block gives positive brake action with drum temperatures *as high as 1300 degrees*. Red Block is so positive in its braking characteristics that it is used only on the cam end of the reverse shoe. To balance Red Block's extremely high friction, World Bestos developed the long-wearing 'D' formula which is used on the other three shoe locations illustrated. Thus, no matter how hot the brakes get, Red Block never loses its stopping ability—never fades."

Oregon Lumber Co. Buys RD Wood Hydraulic Press

Among items of equipment purchased by the Oregon Lumber Company for installation in its new hardboard plant at Dee, Oregon, is an R. D. Wood & Co. hydraulic press.

E. W. DeKoning, President of Irvington Machine Works, Portland, Oregon, announces the appointment of W. A. (Bill) Jones (left) as Sales Manager. Jones was with the S. A. Woods Machine Company 10 years prior to joining the sales staff of the Irvington Machine Works last year as Factory Representative. DeKoning also announced the appointment of L. R. (Rex) Hiatt, Jr. (right) as Factory Representative covering Southern Oregon and Northern California. He will make his headquarters at 1139 Crescent Street, Klamath Falls, Oregon. His appointment, according to Mr. E. W. DeKoning, is in line with Irvington's continuing policy of rendering greater service and development assistance regarding improved methods of trimming to the woodworking industry.

Concentrates on Peak Production

Shelving of all plans for entering the famous green Cummins Diesel Special No. 61 in the 1951 Indianapolis Speedway classic is announced by Cummins Engine Company, Inc., of Columbus, Indiana. Company officials said:

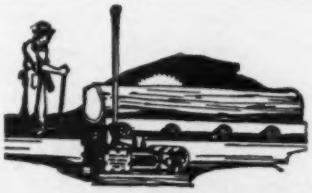
"The tremendously expanding demand for Cummins Diesels, surpassing any period in the company's 32-year history, as well as the continuously accelerating requirements during the present national emergency, precludes the allocation of time and manpower needed to prepare the car for the 1951 race.

"All research and production efforts are being directed toward the maintenance of peak manufacturing schedules, plant expansion for still greater production capacity, exploration of new engine models, and refinements to current engines in the Cummins line.

Take Delivery of "Caterpillars"

Bigelow Logging Co., Forest Hill, Calif., recently took delivery of a "Cat" D8 with Hyster logging arch, from the Weaver Tractor Co., Sacramento.

Hangtown Lumber Co., Placerville, took delivery of a "Cat" D7 with Hyster winch; and the Michigan-California Lumber Co., Camino, got a "Cat" D8 with "Cat" 'dozer from the Weaver Tractor Co., and the Setzer Forest Products, Greenville, got a D8 with Hyster winch.



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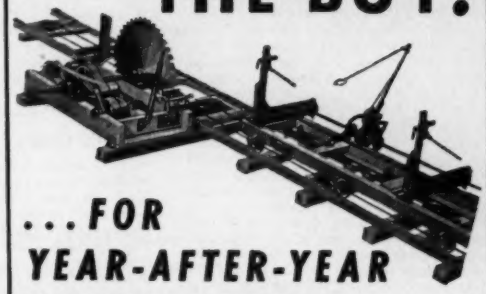

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HIGH PRODUCTION 8-FOOT MILL FEATURES MODERN MACHINES

By MILTON H. MATER

MANAGING-OWNER, MATER MACHINE WORKS, CORVALLIS, OREGON

The sawmill industry has witnessed changes in the past five years which many old-timers would have shaken their heads at and doubted possible. None of these developments has been more outstanding than the growth of the high production 8 foot stud mill.

The post-War expansion in the modern 8 foot stud mill is typified by the major changes made recently in the Wren Sawmill, of Wren, Oregon, an 8 ft. circular sawmill which is part of the operations of A. L. MacInnis' Wren Planing Mill.

When this mill was designed four and one-half years ago it aimed at a cut of 25,000 board feet a day of 8 foot lumber with three men in the mill. Actually, during the past year and a half, since Doug Wheeler took over as the plant superintendent, the cut rose to an average of 38,000 board feet per shift, still with three men in the mill. Though 38,000 board feet a day in a mill of its size was an accomplishment to be proud of, it was felt that new larger equipment —with all the modern features which have become available for sawmill use in the last few years—would greatly increase production, yielding better grades and more accurate lumber. Therefore MacInnis installed a new Mater carriage, carriage feed and edger and the mill was reinforced to take care of added weight and shock loading.

Old Mill Outgrown

The original mill, which used Mater Machine Works equipment, was built for small diameter logs. The carriage had only a 36" opening and a small 8 H.P. Mater Oilgear Carriage Drive was used. The carriage was very light and the speed of nine lines per minute was attained with the use of this Oilgear, which is the smallest one ever installed for sawmill carriage drive use.

It was only by excellent timing and workmanship and a thorough study of the mill itself that Doug Wheeler was able to reach the excellent production which he did. An example of one of the factors which kept the cut high was that most of the 8 ft. stuff was cut as four by fours and went to the resaw plant which is part of the Wren Planing Mill operation, where it was resawed into two by fours. This enabled full advantage to be taken of the ability to turn the four by four squares before resawing and get the best grade available for two by fours.

Five Years of Progress Goes Into New Mill

One of the recently developed features on the new carriage is the Sel-Set remote control setworks. The Sel-Set, which is manufactured by the Sel-Set Co. of Salem, Ore., is powered by a Gardner-Denver air motor.

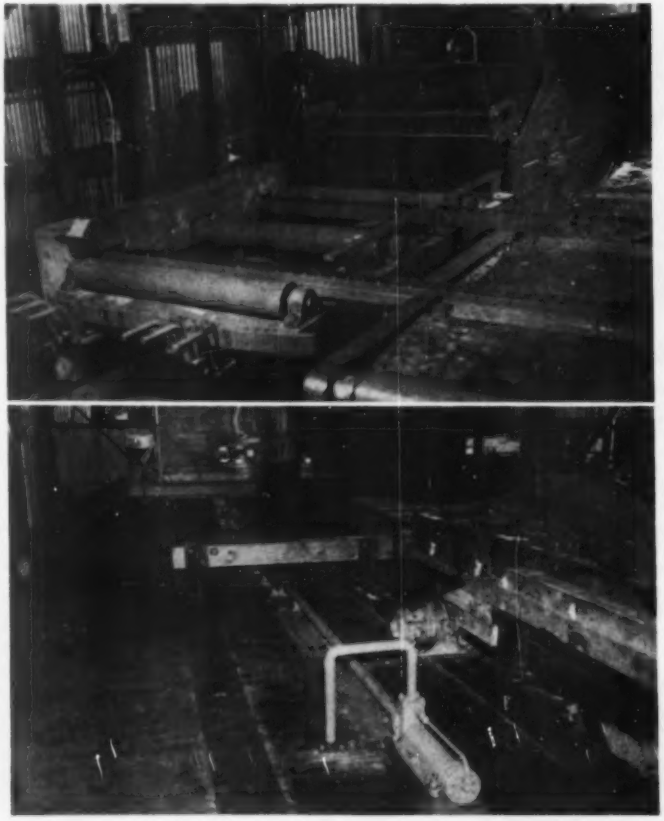
A horizontal scale is used on the carriage for ease of reading by the sawyer. This type of horizontal scale was first used on the original carriage in this same sawmill. The dial is magnified; that is, an inch and a half on the dial is an inch on the set-out. This makes it much easier for the sawyer to read. The Sel-Set unit is of the three push button type. It is adjusted to set out one inch, two inches and four inches, plus saw kerf. Sel-Set push-button handles are used on both the sawyer lever and the log turner lever; the log turner lever, in addition, has four switches in its base. A total of ten buttons can be activated by the sawyer merely by the use of the two levers.

Flippers, for flipping the logs and cants off the carriage, are another high production feature on the new carriage. The flippers are of the Mater Machine Works design; the only type available which flip over 90 degrees. A cam pulls them back into position. The flippers will kick-off down to a 1 x 12 board.

Another feature of the carriage are air dogs. The air dogs consist of one air operated boss dog in each knee, and a hook dog on the front knee. In accordance with the Mater Machine Works practice of using standard parts, the air cylinders which power the dogs are Westinghouse Pacific Coast Brake Co. cylinders, and the valves which control the cylinders are Valvair solenoid valves.

First Use of Full Length Hydraulic Shotgun

One of the outstanding new features in this mill is the use of a full length hydraulic shotgun. Since the Wren Planing Mill purchased the first Mater Machine Works Oilgear hydraulic carriage drive four and one-half years ago when it was newly introduced to the sawmill industry, MacInnis was pleased to co-



Top: Mater Machine Works 6x42 air lift, heavy duty edger. Note the kick-back fingers, required by Oregon state code; two speed electric motor at far left operated the feed rolls. Roll case and transfers are all steel with Shafer roller bearings. Bottom: Hydraulic shotgun shown in the foreground, with edger on the right and carriage in the background. Two hydraulic cylinders are used as rams to operate the carriage. Dash pots at the end prevent run away and provide cushion for accidental full-speed runs. A speed of 15 lines a minute was obtained with this 7,000 pound carriage.

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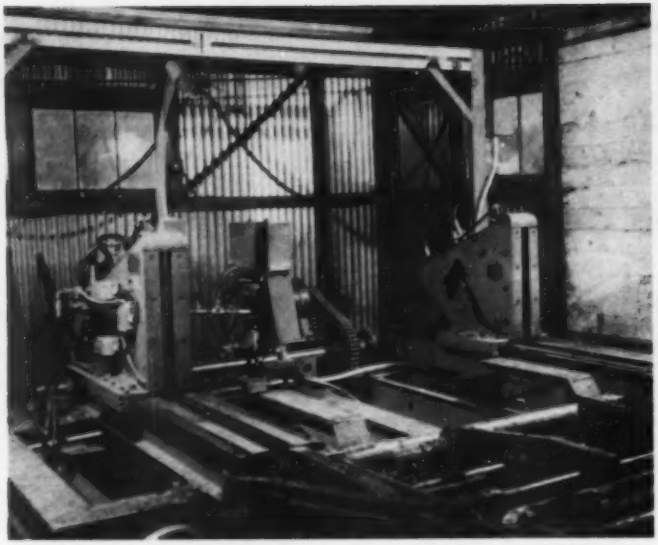


Eight foot Mater Machine Works air dog, sawmill carriage. The hydraulic shot gun is powered with 35 H.P. Oil gear pump. Note horizontal dial for ease of reading. Flippers are seen in the foreground on the carriage with 8x15 Ortman-Miller cylinder. Gardner-Denver air motor with Ross valves in the background on the Sel-Set remote control setworks. On the left side of the front knee can be seen the Valvair solenoid valves which operate the air dogs. Blowers may also be followed through to the Skinner valve which is used to operate them.

operate in trying out his new hydraulic shotgun. It is a new departure in the sawmill carriage drive field. As a shotgun it is capable of great speeds. In fact, it was guaranteed to produce 15 lines per minute with the 7,000 pound carriage. Stop-watch tests prove that the guaranteed 15 lines per minute have been readily delivered. (A line is considered to be a complete cutting cycle, from the time the log hits the saw until it returns and hits it over again.) The hydraulic shotgun is powered by a 35 H.P. Oilgear pump.

In order to take advantage of the higher cutting speeds obtained with the hydraulic shotgun a new edger was ordered from the Mater Machine Works to go with the other equipment. This edger is a heavy duty, six saw machine, with the saws 24" in diameter. This edger features four Colman feed rolls, manufactured by E. C. Atkins & Co. Chain drive also was used throughout. The edger has a two speed Westinghouse electric motor on the feed rolls and cuts either at 200 or 300 feet per minute.

Another feature of the edger is the air lift. This is accomplished by having two air cylinders, one above either set of arms, and an ingenious cam arrangement which does away with gear sectors and other connections to the lifting arms.

The mill cut has been increased substantially, and it is expected that the yearly average will show over 50,000 board feet per shift cut. The same three men are being used in the mill.

Roberts New Head of Allis-Chalmers

W. A. Roberts has been elected president of Allis-Chalmers Mfg. Co., succeeding Walter Geist, who died January 29, of a heart ailment.

W. C. Johnson, executive vice-president in charge of the general machinery division, was named executive vice-president for the entire company.

R. S. Stevenson, general sales manager of the tractor division, was named vice-president in charge of the tractor division.

Roberts began his career with Allis-Chalmers in 1924 as a salesman for the company's branch in Wichita, Kansas. He became vice-president in charge of the tractor division in March, 1944, and was elevated to executive vice-president in charge of that division in 1947. In January, 1948, he became a director, and a member of the board's executive committee in March, 1948. Roberts is a regional vice-president of the American Road Builders' Association.

Johnson started with Allis-Chalmers in 1924 as a machinist's helper. After service in the company's field and sales organizations, he became vice-president of the general machinery division in 1944, executive vice-president in 1947, and a director in 1948.

Stevenson, who succeeds Roberts as head of the tractor division, has been associated with Allis-Chalmers since 1933. He became general sales manager of the tractor division last year.

J. H. McLaughlin, well known electrical construction man, has been appointed distributor for Cyclops Iron Works, bridge and other types of cranes. McLaughlin has his location in suite 305, Lewis Building, Portland, Ore.

Machinery Personals

Appointment of *Fred F. Welch* of Portland as manager of the Hyster Company's retail store in Seattle, Washington, succeeding Vernon G. Lindenberg, is announced by *Ray Ronald*, Western sales manager of Hyster Company, Portland, Oregon.

Link-Belt Company, manufacturer of materials handling and power transmission machinery, announces that *Andrew K. Kolar*, district manager at Moline, Ill., has been appointed assistant sales manager for Pershing Road plant products, with office at 300 W. Pershing Road, Chicago. The company aslo announces that *Stuart T. Penick*, heretofore district engineer at Dallas, Tex., has been transferred to Moline in the capacity of district manager, to suceed Mr. Kolar.

Bud Andrus, sales engineer for Monarch Forge & Machine Works, Portland, left for Yugoslavia on January 24th to supervise the installation of eight complete sawmills sold by Monarch Forge and Machine Works to the Yugoslavian government.

The appointment of *David H. Lomax* as vice-president in charge of sales for Industrial Air Products Company has been announced by *Gilbert Schnitzer*, president. Mr. Lomax has been a member of the sales department of the Industrial Air Products Co. for seven years. Mr. Schnitzer also announced the completion of additional plant facilities to service customers in Portland, Medford, Spokane, New Orleans and Pascagoula, Miss.

Selmer Jacobson, Branch Service Manager, and *Dennis Holland*, Truck Mechanic, receive 10-year service awards from *J. T. Sullivan*, District Manager, International Harvester Company, Motor Truck Division. The certificates and pins were presented to Holland and Jacobson in recognition of their 10 continuous years of service in International truck shops.

E. A. Tiarks, western division district representative at Seattle, Washington, has been promoted to assistant sales manager in that division, with headquarters in Spokane, Washington. *R. M. Richards*, who has been Tiark's assistant, has been promoted to succeed him as district representative, and will continue to headquarter at Portland, Oregon.

E. P. Morris, vice-president and general sales manager of Coe Manufacturing Company, recently visited the new office and warehouse of *A. M. Conway & Son* at 1623 S.E. 6th Ave., Portland. They are carrying complete lines of Coe and other plywood machinery and parts for prompt service.

Charles Weaver, nationally known turbine sales engineer, recently visited the Pacific Coast. While here he visited *Fred Sams*, his Portland representative, and Sundfelt Equipment Company, his Seattle representative .

To Install Hogs

Columbia Veneer Co. of Kalama, Wash., recently took delivery of a new No. 45 Diamond hog from Portland Machinery Co., the distributor. Two No. 35 Diamond hogs were also delivered to the Northwest Chair Co. of Tacoma and the White Pine Lumber Co. of Lakeview.

Left—One of the new Skagit mobile trackline donkeys mounted on "Caterpillar" tracks and also "Caterpillar" powered. Edward Fielder, special Skagit field engineer at the controls. Above—One method of handling logs with the skyline. Note the especially designed Skagit carriage and the arrangement of wire cables.

TRACK MOUNTED DONKEY

Modern mechanized logging has been introduced successfully into the large rugged mountain forests of Yugoslavia by Skagit Steel & Iron Works through development of its new Mobile Trackline logging donkey mounted on "Caterpillar" tracks.

First units of the new equipment have been put in operation by the Yugoslav government, with Edward Fielder, special Skagit field engineer, training the operators. Fielder has just returned home with a report to Skagit Steel that the new mobile machines and newly perfected Skagit openside carriage are being successfully employed by the Yugoslavs to move large turns of logs over rough ground badly cut up by deep narrow canyons.

The self-propelled units and self-locking openside carriage were developed to adapt a modified Tyler system to the particular requirements of the Yugoslav forest conditions.

In developing this type of equipment Skagit also had in mind the various requirements throughout the world and will produce the Mobile Trackline in sizes and with drum arrangements and accessories to fit any type of logging.

Road construction into the mountainous timber stands in Yugoslavia is impractical because of the deep ravines. This land is too rough for the oxen and horse logging found along the roads. To meet this condition, Skagit developed a track-mounted logging hoist with a Skagit drive which uses the power from one engine for both moving and to operate the drum set.

A modified Tyler system recommended by Skagit and adapted by the Balkan country uses a Skyline supported by hangers hung between trees to overcome line deflection and to provide adequate skyline clearance on knolls. By thus supporting the skyline, lighter cable can be used. The drum set includes a storage drum for reeling in the skyline when moving. Drums also are provided for the main lifting line, the inhaul, and the haulback. Each unit also is equipped with a straw drum.

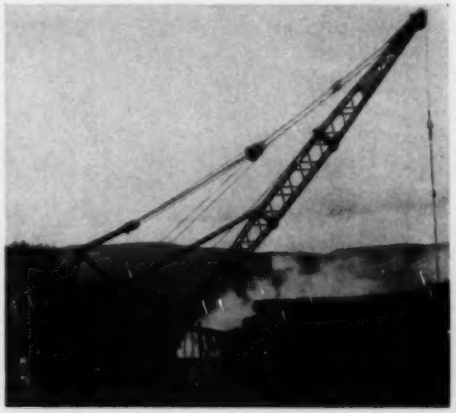
On one of the 2100-foot yarding shows set up by Fielder in Yugoslavia, three hanger stations were used. These hook-like hangers are suspended by cables between two trees. Since the carriage used in the Tyler system must pass through the hanger, it was necessary to use an openside carriage that would pass the hanger without hitting the side of the hook.

At the same time, a carriage that would jump the skyline or fall off on a side haul would not be suitable. To meet these requirements, Skagit engineered and built a new-type carriage which has an openside but also locks itself to the skyline by a third wheel and tension spring device. Even when tipped flat on its side, this new carriage remains fast on the skyline yet releases itself to pass over the hangers.

The Yugoslavs are quick to learn use of machinery and soon were bringing in as many as seven logs in a turn, Fielder said. They found the machines from America in design and performance far superior to any previously available from Europe.

Maurice J. Erisman, chief engineer for Link-Belt Co. at the Los Angeles plant, has been appointed assistant chief engineer for the company's Pershing Road, Chicago, plant, with headquarters at 300 W. Pershing Road, Chicago. *Homer J. Foye*, chief engineer at the Seattle plant, has been appointed chief engineer at Los Angeles, to succeed Mr. Erisman.

Scott Corbett, Jr., president of Nelson Equipment Co., reports delivery of Link-Belt Speeder shovels and truck type loaders to: Jack Patterson, Prineville, Ore., a Link-Belt Speeder LS-85; Myron Fleiser, Minam, Ore., a HC-70 20 ton rubber tired truck type Link-Belt Speeder; Mitchell Pine Co., Mitchell, Ore., a MS-90 Link-Belt Speeder with a 25 ton Maxi chassis; Roy Wells, Dayville, Ore., a HC-70 Link-Belt Speeder; Bob and Ed Spoo, Prineville, Ore., a HC-70 20 ton truck crane; and Weyerhaeuser Timber Co., Springfield, Ore., a K-360 power shovel; Warm Springs Lumber Co., a HC-90 25-ton rubber tired truck crane.



VARIABLE SPEED PLANER FEED DRIVE

By MALCOLM E. HILLMAN

C. KIRK HILLMAN COMPANY, SEATTLE

Something new has been added to the list of forest products manufacturing plant electric equipment—the All-Electric Planer Feed Drive. For many years planer operators have sensed the great need of a device which would enable them to automatically change the planer feed. Up until rather recently planer operators have had the choice of, at most, a selection of only four speeds and to make the change the machine had to be stopped, requiring a shut-down of from 5 to 15 minutes. Under these conditions speed changes would not be made except when absolutely necessary. The result was much poorly manufactured lumber, damage to cutterheads and even to the planer itself.

An answer to this problem is now supplied by the Hillman "All-Electric" Planer Feed Drive, which is operating in a number of mills.

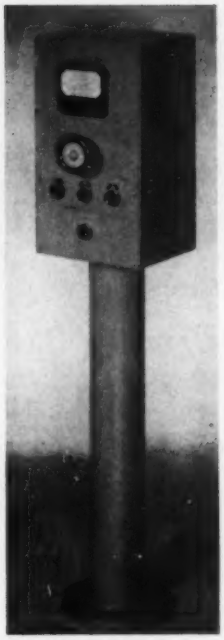
This drive is built in three different types so as to give the operator the choice of having coordinated variable speed control on any or all of the three sections of his planer line. The first is a standard planer feed drive, consisting of a single feed motor plus the necessary variable speed control to give a wide speed range on the main planer feed. The second type includes a feed table motor which is synchronized with the large feed motor, and the third type includes a variable speed take-away table motor synchronized with the first two motors.

The heart of the "All-Electric" planer feed drive is the operator's control station from which the operator can instantly change the speed of the planer feed from 100 to 800 feet per minute, or any lineal speed between the two limits. No matter if the drive consists of one, two or three motors, the entire unit is synchronized so as to speed up all three sections of the planer equipment using only the main speed control lever. In addition to this main lever, additional control is provided for the feed table and take away table motors which allows the operator to make additional speed changes to allow for varying lengths of lumber, keeping the pieces butted as they enter the planer, as well as controlling the spacing on the sorting table.

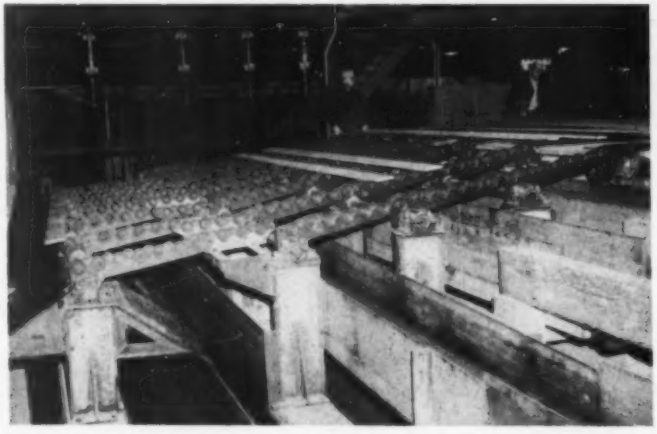
The control system used on the "All-Electric" planer feed drive is an adaptation of the variable voltage control system which has been used so successfully on the familiar Hillman "All-Electric" veneer lathe drives, carriage feed drives, and many other feed applications.

While this system has been used for many years in other industries, the C. Kirk Hillman Company in Seattle is one of the leaders in applying its many advantages to the lumber and veneer industry on the Pacific Coast.

Examples of planer feed drives can now be seen in operation. The single type motor is used at the Schafer Bros. Lumber & Shingle Co. in Aberdeen, Washington, the two motor drive is being installed at the Universal Lumber & Box Co. in Vancouver, B. C., and the three motor type has been in operation for several months at the Simpson Logging Company in Shelton, Washington, on their large timber sizer.



Operator's Control stand for Hillman All Electric Planer Feed Drive. Control features include "jog forward" and "jog reverse" plus variable speed. Dial type speed indicator shows speed of planer directly in feet per minute.



One of the interesting features of the Booth-Kelly Lumber Company's new plant at Springfield, Ore., is the equipment that has been installed behind the Northwest Marine Iron Works "Blue Babe" resaw. Here the graded boards are separated into 5 segregations depending on subsequent processing required for each board. Belts receive lumber coming from all 5 of the separator openings. These belts, from left to right, take lumber to 1" green chain, 2" and thicker green chain, to resaws, to pony edger, to pony trimmer. Bridging sections of the separators are activated by four Ledeen Mfg. Co.'s air operated heavy-duty cylinders, shown suspended from cross beam at far end of separator. Ledeen cylinders are available in heavy medium or super duty types for air, oil or water operation. The Ledeen Manufacturing Company headquarters are at 1604 S. San Pedro St., Los Angeles 15, Calif.

Star Machinery Co. to Represent Irvington

Star Machinery Company, Seattle, Spokane and Portland, has been appointed an exclusive dealer for Irvington Machine Works. The territory involved is the state of Washington, the Panhandle of Idaho and Western Montana. Irvington Machine Works has had more than 40 years' experience, specializing in the manufacture of trimming equipment and cut-off saws.

Shown here is the new trade-mark recently adopted by Signode Steel Strapping Company, Chicago, Illinois. It retains the girdled globe motif familiar to Signode customers for the past 30 years, because Signode service truly is world-wide.

SMOOTH running V-BELTS

"Smoothest running V-Belts we've ever had," users say. "... and they smooth out our production problems, too!"

Smooth running is no accident in Condor Whipcord V-Belts. For example, we micro-position the pulling section so that it stays in the neutral axis area, where engineering practice says it should be. With every belt so precision-made, a Condor Multiple V-Belt drive is bound to be a smooth running team.

Bulletin 6868 D, mailed on request, describes all advantages to you of Condor Whipcord V-Belts.

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McCulloch Chain Saw Conversion

McCulloch chain saw equipped with conversion for ship auger.

McCulloch Chain Saw, of Coos Bay, Oregon, has devised a conversion for ship augers from 1" to 4" for use on the McCulloch Earth Drill. The conversion unit has proved very satisfactory in the Coos Bay area for use in drilling boom sticks in the water and out. Donkey sled builders are using this unit extensively where there is no power available to drill the holes to anchor sled cross-members in place.

Small mills have found this unit very useful in drilling holes for powder in splitting logs that are too large for the mill to saw. Some of these units are being used for splitting Redwood logs in the same manner.

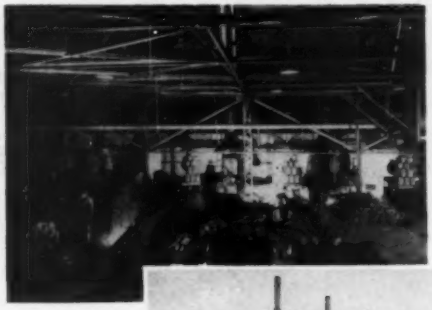
The combination 5-49 saw and auger is very economical to small operators as well as the larger ones because of the small investment required, as most operators already have a McCulloch 5-49 saw in camp and all that is needed is the earth drill attachment and conversion of the augers to fit the drill.

New Service and Parts Center, Fuller Manufacturing Co. (Transmission Division), Kalamazoo, Michigan

Fullers New Service Building

Completion of a new building to house expanded service facilities, first step in an overall plant enlargement program of the Fuller Manufacturing Company, Kalamazoo, Michigan, has been announced by Luther C. Butler, Manager of Service Sales. Construction of a second new building, to house increased research laboratory facilities, is under way.

The enlarged service facilities are provided in an effort to reduce downtime of Fuller-equipped vehicles to a minimum by speeding shipping of service parts to Fuller field service stations. Equipment incorporates the latest and most modern devices and means for controlling, handling, storing and shipping service parts. The new building is located at 2623 Burdick Avenue, Kalamazoo, one-half mile from the main Fuller plant.



Exterior and interior views of the Portland Chain Manufacturing Company's new plant at 4100 N.W. Yeon Avenue, Portland, Oregon.

New Dodge Trucks Have 50 New Features

More than 50 new features have been built into the new B-3 Series of Dodge *"Job-Rated"* trucks to provide faster, safer and more economical hauling of larger payloads. Power increases up to 20 per cent, entirely new styling, better brakes, improved steering, newly designed shock absorbers and more driver comfort are among the major improvements in the new line which ranges from 4,250 to 40,000 pounds gross vehicle weight. Nominal ratings range from one-half ton to four tons.

Moves Into New Plant

Portland Chain Manufacturing Company recently moved into their new, up-to-date, all-steel plant building 136 ft. by 95 ft., at 4100 N.W. Yeon Ave., Portland. This new modernized chain plant is designed to forge and fabricate steel chain economically and efficiently. Portland Chain has the necessary engineering plant facilities and equipment to handle the chain problems of the lumber industry.

Through experienced field and designing engineers and by request of the mill operators, Portland Chain has developed Portalloy, an all-steel alloyed box chain. Portland Chain manufactures round link conveyor, coil, boom, deck lashing, rafting, and other types of chain and flights. They supply iron and steel sprockets, idler drums, log sheaves, log chain and other chain and mill accessories.

Adds Crawler Tractor

Forestry Equipment Co., Jacksonville, Fla., and Macon, Ga., has added the new John Deere crawler tractor for woods operation to their line. The company, in which Robert and George Mosely are active, also handles the Homelite power chain saw.

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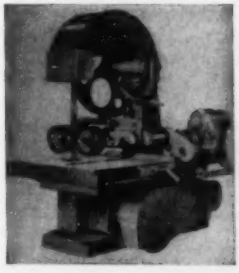

Turner SBR 42" Band Rip Saw

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IN THE HEART OF THE LOGGING INDUSTRY

Anacortes Veneer Inc. Now Making Plastic Surfaced Plywood

Production of "Armoron" plastic-surfaced plywood is under way at the expanded Anacortes, Washington, plant of Anacortes Veneer, Inc.

The new product has a high-resin impregnated cellulose fiber sheet permanently fused to both faces of selected "Armorbond" exterior-type plywood. Two types of "Armoron" are produced—a grey-surfaced panel for high-quality, concrete form work and "natural" panels with transparent plastic facing for construction and industrial purposes. Both are offered in standard 4'x8' size in all standard thicknesses.

The plastic-faced panels are formed in a new 850-ton hotplate press designed and manufactured by the Washington Iron Works, Seattle. Panel components are assembled with polished aluminum cauls placed on both top and bottom of each panel assembly.

H. W. McClary, manager of Anacortes Veneer, Inc., states that the new Washington hotpress has several special features contributing to high quality and efficient production of the plastic-surfaced panels. In addition to the wider-than-average opening between plates and rounded plate edges to facilitate loading, the plates themselves are finished to mirror smoothness. Exceptionally close tolerances apply throughout the entire construction of the press.

At maximum oil pressure of 2500 p.s.i. the press applies pressure up to 300 p.s.i. in forming the panels. Six main rams are 12" in diameter with a stroke of 80". Two lifting rams are 6" in diameter. The Lukens steam plates art 54"x106", of continuous passage design. Steam connections to the plates are U. S. Flexible seamless bronze flexible tubes, with individual Yarway steam traps and strainers. Oilgear pumping units include one 14.7 g.p.m. variable displacement pump driven by a 15 hp. Westinghouse motor and one 36.8 g.p.m. constant displacement pump driven by a 30 hp. Westinghouse motor. Other accessory equipment includes Westinghouse control panel; Foxboro 24-hr. chart, temperature recording instruments; Marshalltown pressure gauges; Oilgear and Vogt valves; Airmaze air filter and Ross oil cooler. Special Gargoyle DTE oil is used.

The press weighs approximately 90 tons. Overall height is 21' 4"; height above floor is 14' 7".

The Washington Iron Works is at present engaged in the construction of two other hotplate presses. One is an 850-ton, 54"x106" plywood press, similar to that constructed for Anacortes Veneer. The other is an unusually large unit for forming hardboard—a 5,454-ton press with platens measuring 54"x202".

Two Allis-Chalmers HD-5 crawlers are knocking out logging records at Sandpoint, Idaho, near the Canadian border. The Pack River Lumber Co., which owns the HD-5's, is logging huge footages of god terrain. Both spite of steep, rug-white pine daily in crawlers are equipped with Carco winches, and one has a Carco dozer. This second tractor handles most of the Pack River Company's earth-moving requirements.

New Mill Starts

The new Walter Brix, Inc., sawmill at Bicelend, Calif., is now in operation after five months of construction by Ted Balch & Associates, Salem, Ore. Superintendent "Bob" LeRay is in charge. The new mill is expected to cut upward of 80M per shift, when final installation of a 66" Salem resaw is made.

The mill has live deck and air log loader. The carriage is a 60" by 24' remote control unit manufactured by Ted Balch & Associates. The head rig and roll cases throughout the mill were built by Salem Equipment Co., as was the edger, a 60" by 8" with air feed rolls. The trimmer is a 26' by 8" air trimmer built by Albany Machine Works, Albany, Ore.

The 60" double circular head rig is equipped with Simonds saws, as are the edger and trimmer. Air is supplied by a 545 ft. "actual air" Gardner-Denver compressor. The carriage feed works is a No. S.R. 30 Gardner-Denver air drive with ⅞" cable.

Named Hanna Representative

Hanna Engineering Works has appointed the Industrial Air & Hydraulic Equipment Company, 13306 Kercheval Ave., Detroit, as exclusive sales representative of Hanna products in Michigan (all east of Lake Michigan). Hanna, celebrating its 50th anniversary this year, is the Chicago manufacturer of air and hydraulic cylinders and controls.

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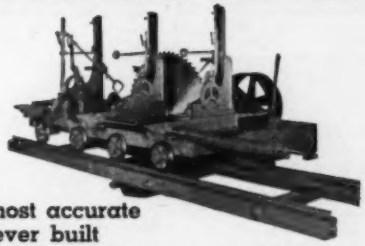

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LITERATURE WORTH HAVING

Much valuable literature is published by the Lumberman's advertisers. Readers are urged to write for these catalogs, folders, bulletins. They contain worthwhile helpful information.

Of special interest to users of Diesel power is a recent publication by Caterpillar Tractor Co., entitled *"CATERPILLAR" DIESEL ENGINES.*

The 16-page illustrated booklet contains first hand, complete information on Caterpillar's latest and most powerful Diesel engines, models D397, D386, D375, and the D364. The booklet covers the outstanding advantages and qualities in "Caterpillar" Diesel engines and is complete with specification and performance charts.

Copies of this informative pamphlet may be obtained by writing Caterpillar Tractor Co., Peoria 8, Illinois, and requesting Form 12725, or by contacting any "Caterpillar" dealer in the United States and Canada.

Performance-boosting and cost-cutting features of International crawler tractors are graphically presented in two new two-page mailers issued by International Harvester Company, 180 N. Michigan Avenue, Chicago 1, Ill.

A read-at-a-glance explanation of the simple, direct transmission-to-track power train of the typical International, is offered in Form A-420-MM: "Is Your Horsepower Going to the Track?"

Exclusive three-point track suspension, for positive alignment and long track service life, is similarly displayed in the folder, "How Long is Your Tractor's Life Line?" Sketches illustrate the function of the front stabilizer, used only in Internationals, in preventing misalignment and minimizing leverage loads. Ask for Form A-419-MM.

Copies of the "features-facts" folders are available from Consumer Relations Department, General Offices at the above address.

The first "Caterpillar" Diesel Tractor built, and purchased by a California lumber company in 1931, is still operating and loads out logs at the rate of approximately 96,000 board feet per day.

A new 16-page booklet, "Built to Live," published by Caterpillar Tractor Co., shows photographs and tells the story of this old timer and also number two and number three "Caterpillar" Diesel Tractors still at work making profits for their owners.

A 79,000-hour veteran engine, installed in 1935 to drive an ammonia compressor for ice-making, is pictorially illustrated along with a 75,000-hour diesel electric set in a lumber camp, a 64,000-hour California ranch hand used in disking, and 50,000-hour diesel engines in a 48-foot lobster fishing boat and in a dredge boat.

Copies of the booklet may be obtained by writing to Caterpillar Tractor Co., Peoria 8, Illinois, or to any Caterpillar dealer throughout the United States and Canada, requesting Form No. 12682.

The new Lorain-50 series of power shovels and cranes is presented in a new catalog just published by the Thew Shovel Co., Lorain, Ohio. This is the first machine in the 1-yd. class equipped with a hydraulic coupling as standard equipment. This feature increases output by improving the "hanging-on" qualities of the engine, prevents stalling of the engine due to any digging conditions, reduces maintenance by acting as a "shock-absorber" to keep impact shocks and digging stresses and strains from being transferred to the mechanism or cables and reduces vibration. This and many other new features, such as new swing clutches, one-piece cast steel turntable bed, air controls for steering and tread lock, are illustrated and described. Four different size crawlers are available in this series as shovel, dragline, clamshell, crane and hoe. An 18-page catalog has also been issued on the Loraine TL series of power shovels and cranes. For copies write to The Thew Shovel Co., Lorain, Ohio.

The TAG midget moisture meter, specially designed for instantly determining the moisture content of wood, lumber, plaster and wood products, is described in a new six-page bulletin issued by the Tagliabue Instruments Division, Dept. 67, Weston Electrical Instrument Corporation, 614 Frelinghuysen Avenue, Newark 5, N.J. Copies of the bulletin, No. 1295, may be obtained directly from the company.

Fast, accurate, self-contained and compact, the TAG midget moisture meter, as described in the bulletin, measures moisture by the electrical resistance method originally introduced by TAG and considered the most suitable for rapid determination of moisture content of wood. Readings are taken directly at the touch of a button in per cent moisture, with no reconversion tables or long laboratory tests necessary.

The bulletin describes the meter's design and construction and explains its varied uses in testing lumber and wood products, plaster in walls and ceilings, and all interior and exterior woodwork.

Lubriplate, the Modern Lubricant, otherwise known as Lubriplate Data Book No. 1-50, is the title of a book that should have a place on the desk of everyone in the forest industries who is concerned in any manner with lubrication of machinery and equipment. It contains specific lubrication recommendations for all kinds of equipment, including that used in sawmill and woodworking plants, electrical and construction and various other equipment.

Copies may be obtained by writing Fiske Bros. Refining Co., Lubriplate Division, 129 Lockwood Street, Newark 5, N.J. Ask for Lubriplate Data Book No. 1-50.

Detroit Diesel Engine Division of General Motors announces a new catalog describing the division's complete line of Series 71 2-cycle diesel engines for application in the industrial, petroleum and marine fields.

The book covers single and multiple engine units from 2 to 24 cylinders with power ranging from 32 continuous to 780 intermittent horsepower.

It contains data on GM diesel 2-cycle design and interchangeability of parts; a "Select Your Power" chart covering 57 standard power take-off and 7 Torque Converter models; engine illustrations and an outline of Detroit diesel service facilities.

Copies may be obtained from GM diesel distributors and dealers or write on your letterhead to Detroit Diesel Engine Division, Advertising Department, 13402 West Outer Drive, Detroit 28, Michigan.

A new 28 page booklet entitled *"10 Questions to Ask a Diesel Engine Salesman"* is being offered by the Murphy Diesel Company, 5351 W. Burnham St., Milwaukee 14, Wisconsin. The booklet asks and answers ten questions pertaining to diesel engine design and gives full mechanical details on the Murphy Diesel line of engines.

Dependable Machine Company, Inc. of Greensboro, North Carolina, U. S. A., manufacturers of Knife Grinding Equipment and Woodworking machinery announce the release of Bulletin C-6 featuring the Dependable Cutter Head *Grinder 102-A.*

This machine has recently been improved by use of the revolutionary, new head setting gauge G-11, developed by the company and now furnished as standard equipment on the 102-A. Savings in time and knives is claimed for this new gauge which is said to obsolete spring pointer type gauges.

The Bulletin describes the machine completely and pictures the side head attachment, moulder head attachment, and straight knife attachment which has just been developed for this machine.

Free literature giving specifications may be obtained by writing Dependable Machine Company, Inc., Greensboro, N. C., and asking for Bulletin C-6.

A 32-page illustrated booklet entitled *CATERPILLAR D8 DIESEL TRACTOR* has been released by Caterpillar Tractor Co.

Featured in the booklet is the D8's ability to get things done effectively, efficiently, and with a minimum of "time out" for maintenance and repair. Quality features of this Diesel track-type tractor are discussed and illustrated along with complete specifications.

Copies may be obtained by writing Caterpillar Tractor Co., Peoria 8, Illinois, and requesting Form 12676, or through Caterpillar dealers.

Ripple Creek Logging Company, operating in the Quartsville district in Lane County, Oregon, recently harvested what it believes is the largest log ever cut in that county. It is 103 inches in diameter and scaled 12,000 feet. It was shipped to the *M&M Woodworking Company*, Albany, Oregon, plywood plant.

H. R. MacMILLAN EXPORT COMPANY LIMITED

Vancouver, British Columbia, Canada

Shippers and Carriers of Lumber and Plywood from Washington, Oregon and British Columbia to all parts of the world.

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(Lumber & Shingles)

In the woods and on the road...

CHAMPION FRICTIONS

Guaranteed frictions engineered and fabricated to each particular use . . . . . .

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EUGENE, OREGON
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when you use
the modern steels of...

Pacific EA. 2147
ESTABLISHED 1912
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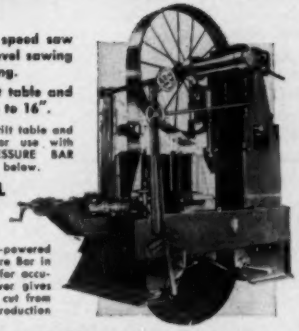
The Gunderson Resaw

Built for **RUGGED** SERVICE

- A versatile, high speed saw for gauge and bevel sawing and center splitting.
- Complete with tilt table and set works. Opens to 16".

Also available without tilt table and quadrant set works for use with Gunderson's new PRESSURE BAR FEED TABLE, described below.



NEW, ALL STEEL PRESSURE BAR FEED TABLE

Complete with chain-powered feed rails. Steel Pressure Bar in full contact with cants for accurate cutting. Single lever gives instant setting for any cut from 1" to 16". Increases production 40% to 100%.

ALSO CUSTOM BUILT PORTABLE ALL-STEEL SAWMILLS AND FLUID DRIVE FEED WORKS

GUNDERSON BROS. ENGINEERING CORPORATION
STEEL FABRICATING DIVISION
4700 N. W. Front Ave.
PORTLAND 10, OREGON

Alvaro Braz, 1103 Cypress St., Redding, Calif. Mr. Braz has installed a new 280 hp Buda diesel engine in his Peterbilt truck. Here is what he says: "I got my Buda engine in July, 1950, and I like it fine. I have hauled 112,000-lbs. It is a plenty tough haul—39 miles with lots of adverse. I make three round trips daily, hauling an average of about 6,900 board feet of logs on my truck and trailer." Mr. Braz hauled for Laduveze Bros. sawmill, Redding, Calif., last summer. The truck is equipped with Bendix-Westinghouse brakes and draws a Fruehauf trailer.

Has Fleet of Twenty Logging Trucks

Blaine McKibben, truck shop foreman, Placerville Lumber Co., Fresh Pond, Calif., is shown standing in front of one of the company's two new International West Coaster Logging trucks. This unit is powered with a 200 hp Cummins diesel engine, has Bendix-Westinghouse air-brakes. The trailer is a Reliance. Load is 5,500 board feet. Haul is 25 miles over mountain highways. The company operated two sides last summer, one was a side with an 11 mile haul over private roads and the loads ran up to 9M′, but on the highway hauling side loads had to be kept to the legal limit of 5,500′. The company now has 20 logging trucks, and six lumber hauling trucks, 18 Reliance logging trailers, and three Reliance lumber trailers. Of the 20 logging trucks eight are Internationals and 12 are Army Whites. Lumber trucks include a Kenworth, White and two Internationals. The company hauls more than 35 million feet of logs per season.

Boyd-Darnell Acquire E. K. Wood-Riverside Branch

Two prominent Southern California lumber executives—Russ Boyd and Charles Darnell—have assumed ownership and direct management of the E. K. Wood branch yard located at 3761 First Street, Riverside, California. The name of the organization has been changed to Boyd-Darnell Lumber Company, and although the name will be changed, the personnel in general will remain the same.

Darnell and Boyd have had many years experience in the retail lumber field, the majority of which were spent with E. K. Wood in various capacities.

BLAINE McKIBBEN, truck shop foreman, Placerville Lumber Co., Fresh Pond, Calif., standing in front of one of the company's two International West Coaster logging trucks.

A practical treatise entitled Production Factors Affecting the Bonding of

DOUGLAS FIR PLYWOOD

WITH

SYNTHETIC RESIN ADHESIVES

BY

J. D. BEATY B.A.Sc.

Chemical Engineer, H. R. MacMillan Industries, Inc. Vancouver, B. C.

Price 35 cents per copy.

Write

THE LUMBERMAN

71 Columbia St. Seattle 4, Wash.

PRACTICAL

LUMBER GRADING and TALLYING

By Stephen W. Agee

60-PAGE BOOK $2.00

(Including 3% Tax in State of Wash.)

Contents: Elementary and Advanced Grading

Douglas Fir construction grades, dimension and timbers, boards and shiplap, green clears, finish lumber. Vertical grain. Advantages of skilled labor, duties of the grader, chain grading, tallying, explanation of shop grades, areas of cuttings, scaffold plank, slope of grain, ship decking, cross arm stock, ladder stock, lumber values in general. Generally used crayon marks—abbreviations.

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Woodworking Plants
PROVIDE QUALITY LUMBER AT PROFIT

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Ask us for names and locations

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P. O. Box 781 Klamath Falls, Ore.
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COMPLETE, MODERN SAWMILLS and PLANING MILLS

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Lumber trimmer has Valvair solenoid individual control valves mounted at operator's platform.

VALVAIRS Serve Dependably and Long on Lumber-Trimming Machinery

Again and again, lumber companies in the Pacific Northwest and elsewhere re-order Valvair air-control valves. Liked features: unrestricted air flow through valves; rugged construction that *lasts;* no metal seats; unique "OU" packers seal more efficiently; repacked without disturbing piping; standardized body permits literally many thousands of combinations.

IMPORTANT: Valvair design protects more fully against flying sawdust. Let us tell you why.

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Power Transmission Products (Division Portland Iron Works), Portland 9, Ore.

VALVAIR CORPORATION • 454 Morgan Avenue, Akron 11, Ohio

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Complete Sawmill Service, Design and Installation

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AND FEED WORKS

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WASTE IS PROFITABLE...

WITH A DIAMOND HOG

- SAW MILLS
- BOX MILLS
- STAVE MILLS
- PULP MILLS
- PAPER MILLS
- HEADING MILLS
- WOOD CONVERTERS

6 Sizes 3 to 36 Tons per Hour

Write For Bulletin D-93

FAST ECONOMICAL REDUCTION OF ALL WASTE MATERIAL

- Green or seasoned non metallic material reduced to easy to handle chips fast! Staggered knives cut full width of anvil and roller bearings allow closer setups, smoother operation with greater horsepower savings —as much as 50%!

IT WILL PAY YOU to investigate this economical hog and find out how YOUR waste can be turned into profits!

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Grade trimming lumber at air operated I. W. Johnson Hula saw, Rock Island Lumber Co., Sutherlin, Oregon.

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Turners, 8", 10", 12"; Carriages, complete; Rolls; Skids; Edgers, 6", 8", 10", 12"; Shot Gun Feeds, 8", 10", 12"; Niggers, 7" x 9", 8" x 10". Trimmers, resaws, gears, transmissions, feed engines, straight connected and geared. Power setworks, rack and pinion and screw type.

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I. W. JOHNSON ENGINEERING CO.
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Working at Booth-Kelly mill, Row River, Oregon

BAIER BOATS

featuring

- DOUBLE FRAMES - DOUBLE CHINE
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- COMBINED THROTTLE & REVERSE
- BUILT IN HEAT EXCHANGER

— IMPORTANT —

Our production of boats is contingent on obtaining engines and steel. Back orders are being filled as rapidly as possible. May we suggest you order NOW to insure future delivery.

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All Saws

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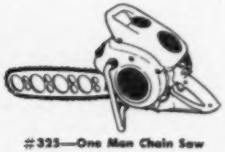
#549—One or Two Man Chain Saw



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3 - 6 DAYS ERECTION

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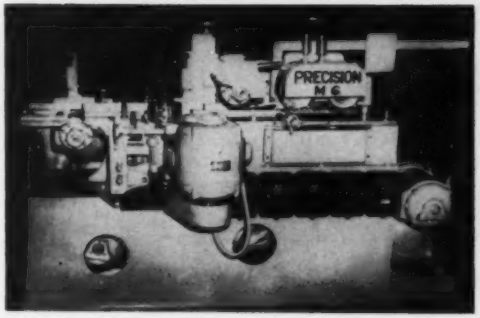

New Precision Hi-Speed core block moulder.

Buys Five Shiploads Equipment

The Schnitzer Steel Products Company has announced the purchase of $750,000 worth of construction and industrial equipment from various Pacific islands.

The material will be sent to Portland, Ore., in five complete shiploads. Included in the equipment are 50 crawler shovels, 40 truck-mounted cranes, scores of tractors, generators, and compressors and more than 500 tons of tractor, shovel and truck parts.

In addition to this material the company has also purchased the Marine depot and Engineers depot on Guam. More than 5000 tons of shovels, cranes, tractors, and trucks from this supply will arrive in Portland on the S.S. Idaho in February.

New Precision Hi-Speed Core Block Moulder

With the ever increasing demand for forestry products and the continually high cost of material and manufacturing operations that are necessary in their production, all available ways of conserving waste of material and labor must be utilized for economic operation. The contribution of the Precision Machine Works, Tacoma, Wash., to this trend is the Precision Hi-Speed Core Block Molder. This machine is an adaptation of the Standard M-6 Moulder, designed and built exclusively for the running of small core blocks at high rates of speed. The moulder, after extensive tests at the plant, successfully ran blocks 3" long at the rate of 225 feet per minute. Spindles were run at 4000 rpm., and the eight-knife round heads were jointed—perfect work is said to have resulted with a finish of eleven knife marks to the inch.

The moulder features a lag bed on both top and bottom with special hold-down pads and hold-in rolls that maintain the uninterrupted flow of blocks through the machine. There is an infinite variable speed drive that furnishes feeding speeds from 75 to 225 feet per minute.

Spindles are 2⅛" on top and bottom, and 1-13/16" on sides. Horse power is 7½ on top, 5 hp. on bottom, 7½ hp. on outside, and 5 hp. on inside with a 3 hp. vari-drive motor. Motors are Nema Standard and can be varied to suit customer preference. Spindle speeds are also variable to preference. This machine is of heavy construction and weighs approximately 700 pounds.

Eager Sales

Portland Machinery Co. recently sold a number of Schurman Machine Works edgers. They sold an 8" edger, three 6" edgers and one 4" edger. In talking about it, T. J. Gleie of Portland Machinery, stated that the Schurman edger is one of the best fabricated edgers he has seen. He likes the feature that they are fitted with roller bearings.

International TD-18

The Tahoe Timber Co., Truckee, Calif., took delivery of an International TD18 with Isaacson 'dozer and Carco winch from the Sacramento Valley Tractor Co., Sacramento. Ben Taylor, Challenge logger, got a TD18 with Isaacson 'dozer and Carco winch from the same company.

greater STRENGTH
greater SAFETY

MOVING AND LOADING BLOCKS
These combination blocks are typical of superior SKOOKUM craftsmanship. Manganese sheaves...Timken heavy tapered roller bearings kept in positive adjustment by patented SKOOKUM locks and washers... leak-proof grease retainers... extra strong cast steel annealed sides. Their rugged construction withstands even the most severe shocks and strains.

SKOOKUM BLOCKS AND FORGINGS

LOADING TONGS
Hand forged from finest tool steel...properly heat-treated and shaped to insure years of satisfactory service. Special "Konkave Beam" legs give greatest possible strength and fatigue resistance with minimum weight. Tongs with spread of from 20 to 65 inches available.

PINE LOADING TONGS
"Konkave Beam" legs for greatest strength with minimum weight. Control forged from highest quality tool steel. Tapered square points for positive grip and easy removal. Tongs with 12, 14, 16 and 18-inch spread available.

Write for the new catalog with full information on logging blocks and forgings. Please use your company letterhead.

THE SKOOKUM COMPANY, INC.
8504 N. CRAWFORD ST. • PORTLAND 3, OREGON

CARBIDE TIPPED SAW REPAIRING

FOR YOUR SKINNER AND CUT-OFF SAWS

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ON ALL SHARPENING AND REPLACEMENT OF TEETH

LATEST PRECISION EQUIPMENT

GUARANTEED EXPERT WORKMANSHIP

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Pacific Service is the Best

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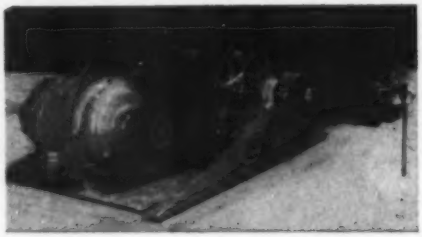
Eliminate Breakdown Problems from Feed Works

By Use of Latest Modern Designed Air or Hydraulically Operated Brake Drum Feed Works



One operator reports cutting 86 M per 8 hour shift since installing Salem Equipment Co. air operated feed works. (Name given upon request.)

39 NEW INSTALLATIONS IN 1950

Standard Heavy Duty Logging Trailer Brake Drums and Brakes used, actuated by Air or Hydraulic Cylinders. A COMPLETE MANUFACTURED UNIT, FOR EASY INSTALLATION, AND RUGGED OPERATION. IDEAL IN PRICE AND OPERATION FOR MILLS FROM 25-75,000 CAPACITY.

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The Skeen Electric Works Electric Feed Drive

A FEW RECENT INSTALLATIONS

OVER FIFTY INSTALLATIONS NOW IN OPERATION

Cascade Locks, Ore., Lbr. Co., 125 HP carriage drive; Roseburg Lbr. Co., 60 HP planer feed drive; Oceanside Lbr. Co. 50 HP planer drive; Engle & Worth Lbr. Co., Winchester, Ore., 50 HP planer drive; Chapman Lbr. Co. (Mutual div.) 40 HP; Southern Ore. Planing Mill, 125 HP carriage drive; Chensy Lbr. Co., 10 HP on Wickes gang mill; Clay Brown Lbr. Co., 10 HP on Edger rolls; Van Vleet Lbr. Co., 7 various Skeen electric drives; Magnolia Lumber, Rogue River, 200 HP carriage drive; Wagner Bros., Longview, carriage drive.

Call or Write for Details

SKEEN ELECTRIC WORKS

IN BUSINESS SINCE 1906

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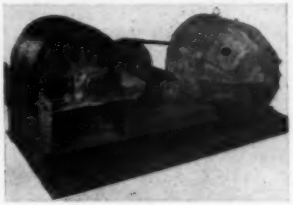
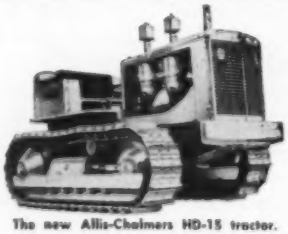


Skeen Electric Feed Works Recently Delivered To Western Sawmills



The new Allis-Chalmers HD-15 tractor.

AN ENTIRELY NEW CRAWLER TRACTOR

Designed for the job — Easy to operate

Built to take it — Easy to service & repair.

AMERICAN MACHINE CO.

W-1026 Broadway Spokane, Wash.

Phone Fairfax 2591

American Machine

Named Reed-Prentice Power Saw Distributors

Left to right: Donald Smith, William Tubesing and Sam J. Zidell.

The Zidell Machinery & Supply Company, 3121 S.W. Moody Street, Portland, Oregon, has been designated Oregon distributor for the new model 50 one and two-man chain saws manufactured by the Reed-Prentice Corporation, of Worcester, Mass. The territory also will include five bordering counties in Washington.

Simultaneously the Zidell company has announced the appointment of W. E. Hutchins as chain saw manager. He previously has served in the sawmill division as assistant manager.

Donald Smith, manager of the chain saw division for Reed-Prentice, announced that the Zidell company will be Oregon distributors. He also disclosed that William Tubesing will become western manager for the firm in a territory to include 11 states. His headquarters will be in Portland.

Buys Plywood Plant Equipment

A modern plywood plant is built in Astoria by the Astoria Plywood Company. Mr. Norman Jacobson, well known plywood operator, is manager. The plant is expected to be operating in July.

The main equipment, most of it supplied by A. M. Conway & Son, Portland, consists of a Coe lathe with an 84" swing and 113" knife; an Ajax twin cylinder engine, with an 8" stroke and 11½" bore, drives the lathe. They have a 4-deck 150' Coe tray system and a model 330 Coe clipper with 110" knife length is being installed. A 4-line, 15-section, latest type double air system Coe drier will take care of the drying of the veneers. Globe barkers and patching equipment will be used as well as a Grays Harbor hog.

Work on the plant is progressing satisfactorily. Boilers were installed on March 1st and the building will be completed April 1st.

Southern I-H Distributor Moves

Ray Brooks Machinery Co., distributor for International Harvester tractors in south Alabama and northwest Florida, have moved to their new home on U. S. Highway No. 80, on the western outskirts of Montgomery, Ala.

To Install Sundbo Gang

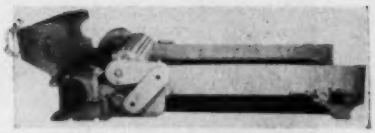
The Southern Oregon Sugar Pine Co. of Medford recently took delivery of a new Sundbo cant gang mill for their Tiller, Oregon, mill. This gang mill is provided to alternate cutting all their fir or pine cants.

Moving to Larger Quarters

A. M. Conway & Son, pioneer agents for Coe Manufacturing Co.'s lathes, driers and plywood machinery, have purchased their own building at 1623 S.E. Sixth Ave., Portland. The building covers 100x100 sq. ft. with three stories and will permit carrying stocks and providing prompt repair service. Mr. Conway was in the Lewis Building, Portland, for 32 years and only moved due to the need for larger space. Associated in the business with Arthur Conway are Jim Conway, his son; George Howman, engineer; and E. M. Elder, drier erector.

Installs Newman Matcher

The Frank Jones Machinery Corp. of Los Angeles in February supplied the Forest Products Co., Albuquerque, New Mexico, with a No. 512 Newman Matcher.

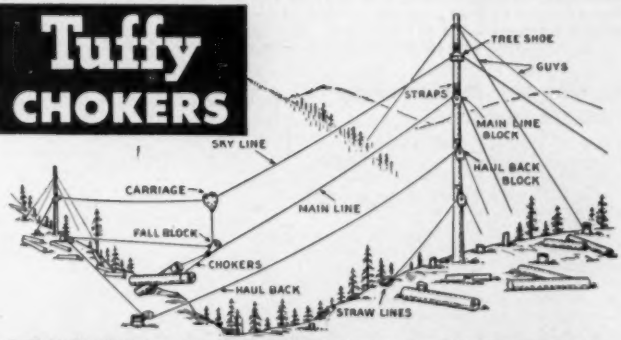


Shown herewith is a Peninsula chain table feed type of plywood hog, manufactured by the Peninsula Iron Works, Portland, Oregon. They come in three sizes, 30", 42" and 48" throat opening, as well as in the belt type. Recent deliveries of this style include two to Mutual Plywood Corp., Eureka, Calif.; one to Coos Bay Lumber Co. Plywood Division, Coquille, Oregon; and one to Martin Bros. Box Co. Plywood Division, Oakland, Oregon.

Takes Band Mill

The Big 4 Lumber Co., at Monument, Oregon, recently took delivery of a new 7' Klamath Iron Works band mill.

Tuffy CHOKERS



STAMINA, FLEXIBILITY, STRENGTH BUILT INTO THE SPECIAL CHOKER

Specially stranded, specially socketed for logging operations, Tuffy Chokers have the extra strength, stamina and flexibility which makes them the most popular in the Timber Country. These, low-cost, high-performance Tuffy Chokers are easier to order, stock and install, because they are factory-fitted and factory packed. Just tell your Union Wire Rope distributor the diameters and lengths you need and specify "TUFFY."

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TUFFY CHOKERS *in Following Sizes* ½", ⅝", ¾", ⅞", 1", 1⅛".

Send for FREE TUFFY FOLDER and Logging Handbook

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Please send Tuffy Choker Folder and Logging Handbook.

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City_____ Zone____

State_____

Interior view of Tad Dowling's fast-growing Cascade Saw and Tool Company of Chehalis, Washington. Dowling, shown with his staff (fifth from left), has pioneered the sale of carbide-tipped saws on the West Coast. His enlarged shop now offers complete sales facilities besides 24-hour sharpening service on carbide saws. There is an expanded use of carbide-tipped saws in the plywood and hardboard industries along the Pacific Coast.

Carbide Saw Manufacturing Facilities Expanded

Due to increased production and expansion of the plywood and hardboard mills the Cascade Saw & Tool, located in Chehalis, Washington, announces an expansion program.

Tad Dowling, president-manager of the Cascade Saw & Tool, started two years ago pioneering the selling of carbide saws on the West Coast for an eastern concern, and not having service facilities on the West Coast for sharpening saws, installed saw grinder equipment in Chehalis. Due to the very few carbide saws that were in operation on the West Coast at that time he traveled during the day demonstrating carbide saws and on the weekends would work in his small shop sharpening the saws for his customers.

During that period he had sold and had working in the West Coast plywoods approximately 150 carbide saws. The shop facilities had to be increased to more grinders and two full-time employees to take care of the sharpening and service work.

Still having trouble obtaining delivery on new saws from the East, Mr. Dowling realized he would have to start the manufacture of his own saws to keep up with the ever increasing demand for carbide saws in the plywood and hardboard industries.

At this time he changed the name of his concern to Cascade Saw & Tool and now employed a crew of skilled mechanics, machinist expert hammermen and salesmen.

Cascade carbide saws are manufactured exclusively in Chehalis, centrally located, to take care of shipments and other services with the least amount of delay.

Cascade carbide saws are manufactured from the highest grade silver carbon steel obtaintable, which Mr. Dowling purchases from an eastern steel works. It is shipped in large sheets to Chehalis and is in turn processed and cut according to the circumference in demand, tempered, tensioned, polished and manufactured with the required number of tungsten carbide teeth designed for the customer's specific use.

Through experience Mr. Dowling has learned the proper angles, clearances and bevels that are required to cut the various types of plywood and veneers on the West Coast. Each set of saws that is delivered from his plant are built exclusively for the one particular job for which they were designed.

If you have not had any experience with these new saws, drop a card or letter to the Cascade Saw & Tool and a representative will give you information that may be of real benefit.

Among the Filers

Charles Fraser, formerly head filer at Weyerhaeuser Timber Company at Enumclaw, Washington, is now filing at the new Pico Lumber Mill in Montesano, Washington.

Elden Young is now head filer at Weyerhaeuser Timber Company, Enumclaw Branch.

Albert Ernie Knowles, formerly head filer at Anderson & Middleton Forest Products Company, passed away in November at Aberdeen, Wash.

Roy Crozier, formerly in charge of Moulding Mill operation at the Southwest Lumber Mills, Inc. at McNary, is now in charge of California Millwork, Inc., at Inglewood, California.

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We manufacture and rebuild truck, tractor and industrial radiators.

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Douglas Fir Prices

1x4 B and BVG Flooring	$170-175
1x6 C&Btr. Drop Siding	155-160
1x6 No. 1-KD	85- 90
1x8	85- 90
1x10	85- 90
1x12	87- 92
No. 1 Common Timbers and Plank	
3x3 6-20	$86-$91
3x3 22-24	89- 94
3x3 26-32	97-102
3x10 6-20	77- 82
3x10 22-24	80- 85
3x10 26-32	88- 93
4x4 6-20	81- 86
4x4 22-24	84- 89
4x4 26-32	92- 97
6x6 8-20	77- 82
6x6 22-30	80- 85
6x6 32-40	89- 94
8x8 8-20	77- 82
8x8 22-30	80- 85
8x8 32-40	97-102
6x10, 8x10, 8-20	77- 82
6x10, 8x10, 22-30	80- 85
6x10, 8x10, 32-40	97-102
10x10, 12x12, 8-20	77- 82
10x10, 12x12, 22-30	80- 85
10x10, 12x12, 32-40	97-102
Douglas Fir Cross Ties	50- 55
No. 1 Dimension (Green)	
2x4 6-24	$77-$82
2x6 6-24	76- 81
2x8 6-24	76- 81
2x12 6-24	75- 80
Sel. Merch. (Green)	
1x4 6-20	$85-$90
1x8 6-20	95-100
1x12 6-20	100-105

Log Prices

Following prices have been quoted F.O.B. rafted in the Willamette River:

No. 1 Fir Peelers, generally $110.00, occasionally to $120.00. No. 2 Peelers, generally $90.00. No. 3 Fir Peelers, $70.00 to $80.00.

Douglas Fir Saw Mill Logs—No. 1, $70.00; No. 2, $50-52; No. 3, $40-42.

Hemlock—Selected Peelers, $60.00.

Hemlock Saw Mill—Peelers and No. 1, $50.00; Hemlock No. 2 and No. 3, now $36.00 to $40.00.

White Fir—Same as hemlock or $1.00 less. Noble Fir Peelers, $60.00 to $70.00, otherwise same as white fir.

Cedar—Shingle, $40.00-$45.00; lumber, $80.00-$90.00.

Spruce Peelers—No. 1, $90.00-$100.00; No. 2, $70.00-$80.00; No. 3, $60.00.

Spruce Saw Logs—Same as Douglas fir

Spruce Pulp Logs—Same as Hemlock.

Douglas Fir Wood Logs—No. 1, $20.00; No. 2, $10.00.

British Columbia Log Prices

British Columbia log stocks were reported down in January, with prices ranging as follows for Douglas fir: No. 3, $45 to $55.00; No. 2, $55 to $65; No. 1, $65 to $75. Peelers have been selling at $65 to $75 for No. 3's; $75 to $85 for No. 2's and $85 to $95 for No. 1's. Demand for single logs has been increasing steadily, with cedar now selling at $45 to $55 for No. 3; $55 to $70 for No. 2; $80 to $90 for No. 1. Prices for cedar lumber logs are unchanged at $90 to $100 for No. 2 grade, $110 to $120 for No. 1. Hemlock and balsam log prices range from $40 to $47.50 for No. 3, $45 to $52.50 for No. 2 and $50 to $60 for No. 1.

Southern Pine Prices

	B&B	C	D
1x4 Std. VG Flooring PE	$210.00	$195.00	$163.00
1x4 Std. FG Flooring PE	195.00	185.00	158.00
5/8x4 Std. Ceiling	185.00	175.00	158.00
1x6 Drop Siding	206.00	196.00	148.00
	No. 1	No. 2	No. 3
1x6 Std. Boards & Shiplap	143.00	86.00	76.00
1x 8 Std. Boards & Shiplap	143.00	91.00	83.00
1x10 Std. Boards & Shiplap	148.00	91.00	83.00
1x12 Std. Boards & Shiplap	173.00	96.00	79.00

No. 1 Dimension S4S	12'	14'	16'	18'	20'
2x 4	95.00	96.00	96.00	108.00	108.00
2x 6	91.00	92.00	93.00	102.00	104.00
2x 8	96.00	94.00	94.00	102.00	104.00
2x10	104.00	105.00	105.00	113.00	116.00
2x12	110.00	110.00	110.00	121.00	136.00

No. 2 Dimension S4S					
2x 4	88.00	89.00	91.00	101.00	101.00
2x 6	84.00	85.00	86.00	95.00	97.00
2x 8	87.00	85.00	85.00	93.00	95.00
2x10	88.00	90.00	89.00	95.00	97.00
2x12	86.00	86.00	86.00	95.00	103.00
2x 4 R/L No. 3 Dim. S4S					73.00
2x 6 R/L No. 3 Dim. S4S					71.00
2x 8 R/L No. 3 Dim. S4S					70.00
2x10 R/L No. 3 Dim. S4S					68.00
2x12 R/L No. 3 Dim. S4S					65.00

Western Pine Prices

Following Delivered Prices, based on Past Sales, were reported to the WESTERN PINE ASSOCIATION by members during the period January 22 to February 3, 1951, inclusive. Both direct and wholesale sales are included and are based on specified items only. Two districts are given, one being the State of Illinois, outside of the Chicago Metropolitan district, and the other the State of Pennsylvania. Quotations follow:

PONDEROSA PINE

Selects S2 or 4S	1x8"		5/4 RW	
	Illinois	Pa.	Illinois	Pa.
C. Select RL	$241.75	$243.50	$247.29	$276.00
D. Select RL	207.60	209.50	213.87	248.71
Shop S2S	No. 1		No. 2	
5/4	.....	154.00	96.00	.....
6/4	152.68	149.75	96.75	120.41
Commons S2 or 4S	No. 2		No. 3	
1 x 8" RL	.....	.....	101.44	103.58
1 x 12" RL	128.30	131.60	102.29	105.32
4/4 #4 Common S2 or 4S RW&L			.....	94.50

IDAHO WHITE PINE

Selects S2 or 4S	1x8"		6/4 RW	
Choice (C) RL	270.92	274.50	.....	.....
Quality (D) RL	229.13	229.60	241.75	244.00

Commons S2 or 4S	Colonial		Sterling	
	No. 1		No. 2	
1 x 8" RL	167.50		146.50	149.90
1 x 12" RL	195.50		151.96	160.18
SUGAR PINE				
Selects S2 or 4S	4/4 RW		5/4 RW	
B&BTR RL	.....	.....	.....	208.50
D. Select RL	273.50		.....	.....
Shops S2S	No. 1		No. 2	
5/4	168.50		.....	126.50
6/4	164.50		.....	125.50
8/4	178.50		.....	133.50
LARCH-DOUGLAS FIR				
#3 Common S2 or 4S 1x8" RL	90.03		.....	
#1 Dimension 2x4—RL	102.58		.....	
#1 Dimension 2x6—RL	101.03		.....	

Douglas Fir Plywood

1-4 inch basis	$110-$114

Red Cedar Shingles

Perfections (Dry)	
No. 1	$13.00-$14.50
No. 2	7.50- 8.00
No. 3	6.00
XXXXX (Dry)	
No. 1	$11.00-$12.00
No. 2	7.75- 8.50
No. 3	5.75- 6.50

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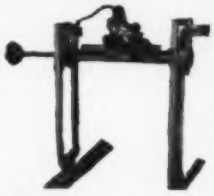

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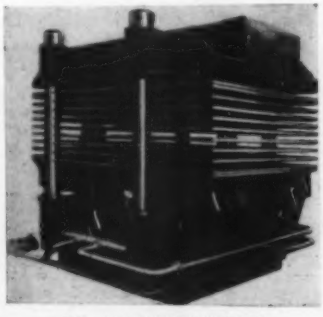

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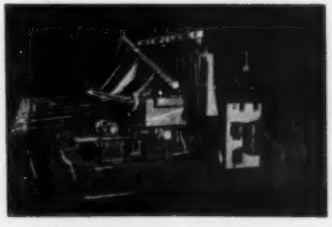

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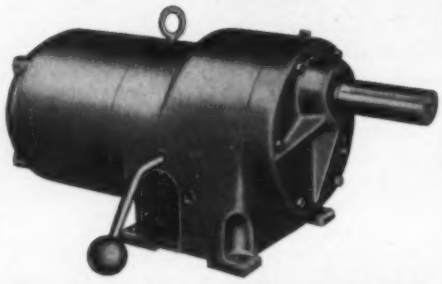

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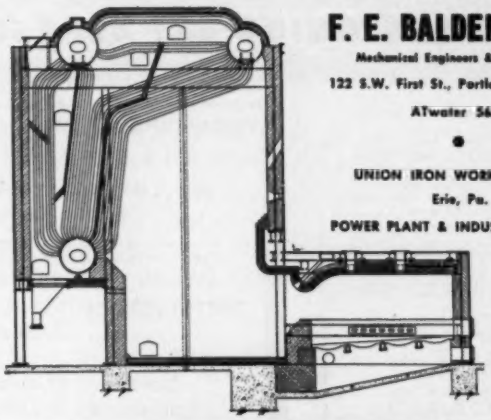

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EXPERIENCED LUMBERMAN,

speaking English, French, Dutch and German, having sold his British Columbia lumber operation, is going abroad about March, visiting most European countries except Russian-controlled, going as far as Greece and Egypt. Would be interested in selling lumber, lumber products, or any other exportable products of Western America. Would be glad to contact interested firms. Please reply to TL Box No. 758, c/o The LUMBERMAN, 71 Columbia Street, Seattle 4, Wash.

LUMBER BUYER

Reliable and active Lumber Buyer with long experience in West Coast lumber and established contacts with Pacific Northwest Fir, Pine and Red Cedar mills, wishes to buy for Eastern connections on a low shared expense basis. Best references. Write Box No. 763, c/o The LUMBERMAN, 71 Columbia St., Seattle 4, Washington.

POSITION WANTED

Manager or superintendent of lumber mill. Have about fifteen years' experience in logging and manufacturing. Have been manager and superintendent of mills for the past eight years. Please reply to TL Box No. 761, c/o The LUMBERMAN, 71 Columbia St., Seattle 4, Wash.

POSITION WANTED

Northwest Logging Superintendent desires position with reliable company. Fifteen years experience, well qualified in cat and truck logging, road construction and maintenance. Familiar with selective logging, forest service methods and operations. Any offer considered, New Mexico, Arizona and Northwest. Age 48, family man. Please reply to TL Box No. 765, c/o THE LUMBERMAN, 71 Columbia St., Seattle 4, Wash.

POSITION WANTED

Over twenty years experience in the lumber industry with leading pine manufacturers, as General Superintendent and Assistant Manager. Lumber buyer and wholesale experience. Bondable and financially responsible. B.A. degree from University of California. Please reply to TL Box No. 764, c/o The LUMBERMAN, 71 Columbia St., Seattle 4, Wash.

SITUATION WANTED

Power Plant Superintendent or Master Mechanic, 3[illegible] years experience. Any size plant—will go anywhere. Extensive research in handling and firing waste wood fuel. Please reply to TL Box No. 767, c/o THE LUMBERMAN, 71 Columbia St., Seattle 4, Wash.

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WEST COAST BAND FILER, ten years experience, wants head file job. Non-drinker. Available anywhere on West Coast with or without family. Give full details in first letter. Please reply to TL Box No. 762, c/o The LUMBERMAN, 71 Columbia St., Seattle 4, Wash.

WANTED TO BUY:
12-inch Moulder, 15-inch Planer and Matcher, Band Mill and machines for millwork such as Sash Stickers, Glue Presses, etc.
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PLYWOOD CUTOFFS WANTED
Shorts, cutouts, strips, etc. All sizes, thicknesses, and types. Cash. Truckloads, Carloads. Please reply to TL
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Lumber company 30 miles from Brainerd. Large stock of native lumber, planer, trucks, buildings, resaw, end trimmer, sawmill, diesel power, and equipment. Good business opportunity. Write or call **M. L. Nutting** at 615 Maple St., Brainerd, Minnesota

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2—Model 90 Ross Carrier, 52x67 package.
1—Model 12X Ross Carrier, 42x48 package.
1—Model 11 Ross Carrier, 42x48 package.
1—Hyster Utility, Hercules motor, 42x42 package.
1—Model 70 Ross Carrier, 52-54 package.

LIFT TRUCKS

1—Hyster Model 150 Lift Trucks, 15,000# capacity.
1—Model 15-HT Ross Lift Truck, 15,000# capacity, 16' lift.
1—Gerlinger PH-662, 16' Lift, 12000# Capacity.

PLANING MILL EQUIPMENT

Berlin No. 91—20x6, 8 Knife Planer and Matcher, New Feed Table, 100 HP Motor and Starter, Ripping Attachment.
Berlin No. 90 6x9, Planer and Matcher, 6-knife Round Heads, Feed Table.
American No. 20, 4x8 square headsticker, hoods, branch pipes, 20 HP motor and starter.
American 44" chain feed band Ripsaw.
New Knife Balance Scales.

125 HP 1200 RPM 3/60/440V Slip Ring Motor with Controls.
100 HP 600 RPM 3/60/440V Slip Ring Motor.

New "General" automatic feed tables, ball bearing, immediate delivery.

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New 66" Resaws.
New 72" Band Mills
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1 Used 8 ft. Allis-Chalmers ball bearing band.
1 Used 14x18 Allis-Chalmers Camel Back geared steam feed.
1 Used 4 Block Allis 66" carriage.
1 Used 4 Block Allis 72" carriage.
1 Used 4 Block Allis 54" R & P carriage.
1 1000 KW Steam Turbine, 440 volt.
1 Used 11 ft. Allis Band Mill.
1 Yates C-1 10" Heavy moulder.
1 Used 36" Circular Resaw.
1 Used Heavy timber Circular Resaw
1 100-900-440 volt Motor
1 75-900-440 volt Motor.
1 25-M Circular Mill Complete.
1 Yates Horizontal Band Resaw.
1 9 ft. Used Band Mill.
1 Yates 10x15-6 knife Planer.
1 Used Stetson Ross Heavy Feed Table.
1 Gardner-Denver Air Compressor, 125 cu. ft.
1 6x54—5 Saw Ball-bearing Stub Edger.
2 Used Gerlinger Lumber Carriers 42" Package.
1 9x12 Steam Feed.
1 11x18 Steam Feed.
1 8x10 Sumner Steam Feed.

Logging Supplies

New wire rope, blocks, etc.
1 7 ft. Prescott 6 Roll resaw.
1 12x10" I.R. Air compressor, 325 cu. ft.

Let us know of any discarded equipment you may have for sale.

Be sure to read the latest FOREST INDUSTRIES NEWS section in each issue of THE LUMBERMAN.

OUTSTANDING OPPORTUNITY

SAWMILL established sixteen years in Vancouver, B.C. Now in operation, with one million dollars annual turnover in 1950, showing excellent profit. Long-standing clientele in export and retail trades, steadily increasing log supply, sound credit. Sawmill now producing 55 M per shift. Satisfactory planer capacity, band re-saw, machine shop and filing room. Large ultra modern office building. Profitable fuel business. Two carriers, one stacker, five trucks, crane, over six acres yard area, half in black top. Expansion possibilities include: dry kilns and re-manufacturing plant. Well balanced organization of medium size presenting genuine opportunity for expansion to large investor. Principals only.

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1 only #77-A Model 5 AMERICAN 15"x6" Heavy Duty Planer & Matcher, 8-knife round cutterheads, double profile attachment with pair of profile heads, jointers for top and bottom heads, complete with countershaft. Overhauled.
1 only #108 BERLIN 15"x6" Moulder, Planer & Matcher, 4-knife square cutterheads, plain bearing. Machine complete with countershaft. Overhauled.
1 only #404 S. A. WOODS 9"x6" Heavy Duty Planer & Matcher, with 6-knife round cutterheads, double profile attachment, complete with countershaft and profile heads. Overhauled.
1 only #8-B NEWMAN 14"x4" Ball Bearing Planer & Matcher, with 4-knife round cutterheads, high speed steel knives, ball bearing countershaft, flexible coupling and set of belts. NEW.
1 only #65 AMERICAN 20"x6" Ball Bearing Planer & Matcher, with 6-knife round cutterheads, set of jointers. Checked over and in good operating condition.
1 only #44 BERLIN 30"x6" Planer & Matcher, with 4-knife square cutterheads, plain bearing, belt driven. As taken from service.
1 only #15 BERLIN 30"x16" Coast Type Heavy Duty Timber Sizer, complete with countershaft, infeed table, set of square cutterheads. Overhauled.
1 only new 6" VONNEGUT High Speed Ball Bearing Roll Feed Electric Moulder. 7½ HP motors directly connected to top and bottom cutterhead spindles, 5 HP electric motors directly connected to sidehead spindles, 2-speed electric feed motor. Machine arranged for 3600 RPM or 7200 RPM operation. Complete with set of square cutterheads, plain and profile jointers, and dust hoods.
1 only #C-4A 8"x4" Plain Bearing Belt Driven Moulder, complete with set of 4-knife square cutterheads, set of belts, dust hoods, jointing attachments, and countershaft. Completely overhauled.
1 only 12"x4" VONNEGUT Ball Bearing High Speed Electric Moulder with 12½ HP electric motors directly connected to top and bottom cutterhead spindles, 7½ HP electric motors directly connected to sidehead spindles, 5 HP feed motor. Spindles arranged for 3600 RPM and 7200 RPM operation. Machine complete with 4-knife round cutterheads, set of hoods, and hopper feed. Overhauled.
1 only 6"x4" HALL & BROWN Drop Bed Sticker with set of square cutterheads and countershaft. In good operating condition.
1 only 4" HAYES 2-head Door Sticker, plain bearing, belt driven, complete with countershaft. In good operating condition.

NEW PLANERS—EARLY DELIVERY

No. 500 NEWMAN Six Roll Ball Bearing Planer and Matcher, 100% ball and roller bearing, 14" wide, 6" thick, six-knife round cylinders and sideheads, jointing devices, countershaft, set of endless cord belts.
No. 510 NEWMAN Six Roll Ball Bearing Planer and Matcher, 100% ball and roller bearing, 16" wide, 8" thick, eight-knife round cylinders and sideheads, jointing devices, countershaft, set of endless cord belts.
No. 512 NEWMAN Six Roll Ball Bearing Planer and Matcher, 100% ball and roller bearing, 16" wide, 8" thick, eight-knife round cylinders and sideheads, 12" diameter rolls, jointing devices, countershaft, set of endless cord belts.

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MACHINERY FOR SALE

LUMBER CARRIERS

1 Gerlinger 4W—45" x 60" Lumber Carrier, 9:00" x 20" tires.
2 Gerlinger, Model 6-L, six wheel Carriers.
1 Ross Model 90, 45" x 60", 7:50 x 20 Tires.
1 Hyster Yardmaster, 45" x 60", 9:00 x 20 Tires.

PLANERS AND MOULDERS

12" Yates #C-111 5 head Moulder.
1 Berlin #109, 6" x 10" with profile.
1 Berlin #94, 6" x 15".
1 Newman #44, 4" x 4" ball bearing electric moulder.

MACHINE TOOLS

1 American 30" x 30" x 12' Planer, 1 head on rail, motorized.
1 Cincinnati #3 Hi Power plain milling machine, motorized.
1 Cincimati Bickford 36" drill, back geared, reversible, No. 5 taper.
1 Floor type ½" capacity drill press with ¼ HP motor.
1 Keckley 200 Ton Horizontal Hydraulic Press, double bars.
1 12" x 30" Hendey tool room type lathe, taper attachment.
1 Cincinnati #3 Hi Power plain milling machine, motorized.
1 American 3 ft. radial drill—9" column.
1 Robertson #4—6" x 8" capacity power hacksaw.
1 Whipp 24" Shaper.
1 No. 57 x 22 Gould & Eberhardt Automatic Gear Cutter.

EDGERS

1 Portland Iron Works 5" x 48" RH 5 saw edger.
1 Portland Iron Works 6" x 48" RH 4 saw edger, 75 HP direct connected motor.
1—Peters 6" x 48" anti-friction bearing hydraulic shift RH edger.
1—Allis-Chalmers 6" x 24" RH 2 saw pony edger.
1 Newport 4" x 34" RH 3-saw edger.
2 4" x 44" 3-saw edger, ball bearing, V belt drive.
1 4" x 30" LH 3-saw ball bearing edger.

SAWMILL MACHINERY

Sumner 72" opening 3 block carriage with Trout #4 set works, trucks and track.
Two 48" opening rack and pinion head blocks with ratchet type hand set works.
Three 54" opening screw type head blocks with dogs.
Headrig—Top and bottom saw arbors for 52" saws, anti-friction bearings.

AIR COMPRESSORS

Ingersoll-Rand 2 cylinder water cooled vertical air compressor, 9" bore by 8" stroke, 310 cu. ft. per min. 100 lb. pressure at 575 RPM (max.).
Horizontal single cylinder water cooled air compressor, 7½" bore by 6½" stroke, 65 cu. ft. per min. at 400 RPM double flywheels, 36" dia. by 5" face.
Leyner 12" x 14" two stage water cooled belt driven air compressor, 70" x 12" flywheel.
Leyner 16" x 18" two stage water cooled belt driven air compressor, 90" x 17" flywheel.

RESAWS

Yates #354—54" twin horizontal resaw. Can be converted to single.
Filer & Stowell 72" vertical resaw with new top wheel.
1 set tilting feed rolls for Mershon 54" resaw.

STEAM ENGINES

Allis-Chalmers 20" x 20" twin direct drive carriage feed engine.
12" x 15" Twin Ball and Ball 60" x 16" flywheel.
12" x 15" Ames side crank. 60" x 15" flywheel.
6" x 8" side crank, 26" x 6" flywheel.
8" x 10" twin Erson & Brantingham carriage feed engine.
Lidgerwood 4 drum steam hoist.
11" x 13" Willamette 3 drum hoist.
8¼" x 10" twin log haul engine, single drum.
7" x 9" geared carriage feed engine.
4½" x 5" twin Marion engine.
Soule Spee-D-Twin Engine with carriage feed drum.

ROAD OILING EQUIPMENT

1 Circulating Oil Distributor.
1 Farquar 20 HP boiler, skid mounted.
1 Commercial Iron Works Retort.
1 Austin Power Patrol Grader.
1 Austin Pull Grader.

SPECIAL

3 bearing, slide base mounted GE Synchronous motor, 300 HP, 720 RPM, 2300 volt, 72.5 amps. Type AT-1-10, 1. Power Factor, Serial No. 302235. Controls: manual, starting & running switch is Westinghouse oil circuit breaker—Type G.F. 7400 volt max.—300 amps.—Style 321059. Starting transformer is Westinghouse 350 KVA 1 min.-60 cycle, 3 phase 220 volts to 1020/825/440 volts, style 320569 R. Switch is mounted on panel with knife field discharge switch, exciter rheostat, A.C. ammeter, D.C. ammeter & volt meter.

MISCELLANEOUS

1 Greenlee #228 Mortiser.
1 300 Amp. Lincoln Electric Welding Machine.
1 GE portable electric welder, motorized.
1 Westinghouse 200 amp. electric welder.
2 Elwood Electric platform trucks.
1 Clarkette #6 truck tractor.
4 Heavy duty pedestal type grinders.
1 Small 2 drum American Hoist.
1 Hyster double drum yarding winch for D-8 Caterpillar tractor.
1 66" double extended firebox donkey boiler.
1 #40 Diamond Hog complete with coupling and motor.
1 42" x 80'—¼" steel smokestack.
1 8" x 72" band saw top wheel.
4 30" blower fans with 5 HP direct connected motors.

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1 x 12 PONDEROSA PINE, S4S, K.D.
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Good Used Equipment

15-B ½-YD. Bucyrus Erie gasoline powered shovel.
MODEL 20 ½-yd. Bay City shovel, drag shovel and crane.
MODEL 304 ¾-yd. Koehring shovel, gas powered.
D-7 CAT tractor with angle dozer, double drum, P.C.U.
CAT-11 Diesel powered grader, tandem drive.
PARSONS 221 ditcher.
D-13,000 cat diesel skid mounted power unit.
50 KW 440-V F. M. generator and panel board.
Clyde 2 Drum Loader, 4 Speed, 85 HP. Gas Powered—40,000# Line Pull.
2 PD 40 Int. diesel power units.
60-105-210-315 portable Sullivan-Schram-Le Roi air compressors.
COMPLETE stock Telsmith rock crushers, screens, conveyors.

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NEW 18-HP. UNIVERSAL ENG., power plant with TD clutch.

Special Low Prices On

270 GMC ENG., comp. with 5-speed hvy. duty trans.
248 GMC ENG., comp. with 4-speed trans.
450 INT. ENG., comp. less str. and gen.
228 H.P. HERC., diesel power plant, comp. with T.D. clutch.

SPECIAL EQUIPMENT SALE

D4 CAT, with Trackson front loader, like new, only 257 hrs.
D4 CAT, like new, only 209 hrs.
15 KW GEN. SET, 110/220 v, 3 phase at a bargain.
BYRON JACKSON PUMP, comp. 500 G.P.M. at 463 head powd. by 8-cyl. Chrys. eng.

ALSO

NEW 10,000 B.T.U. truck or car heaters (gas) 90% disc.
NEW STORM con. rod aligners, 60% disc.
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RESAWS — BAND MILLS — PLANERS

1 9' Allis, L.H. roller bearing type A.
1 9' Western R. H. roller bearing (new).
1 Berlin No. 41 6x15 4-knife planer (cheap).
1 No. 150R Covel band saw grinder.
1 Irvington RH Auto-selective trimmer 0-30'.
1 Berlin Timber Sizer
1 #77A 8 Knife matcher T&B profile.

EDGERS

1 Portland Iron Works 4"x30" with table.
1 Evergreen 6"x46".
1 Tower 4"x36" with table.

STEAM AND FEED ENGINES

1 7x9 Marion twin, direct.
1 Brownlee 6"x8" twin, direct connected.
1 Speed-E-Twin with drum.
1 Western 12"x42' shotgun (new)
Erie Engine 8x12 Single
1 Wheeland 9"x12 with drum.
1 50 HP Skoen electric carriage feed.

DECK EQUIPMENT

1 40" R&P carriage.
2 8"x10"x60" oscillating nigger.
1 12" Simonson Turner

USED MOTORS (Partial List)

1 200 HP, 720 RPM, sq. cg., 440-V, New.
1 150 HP, 1800 RPM, sq. cg., 440-V.
1 75 HP, 720 RPM, slip ring, 440-V.
1 7½ GE 45 RPM geormotor (new).
1 15 HP, 720 RPM, slip ring, 440-V.
1 50 HP int. diesel power plant.

MISCELLANEOUS

2 Gerlinger 42" carriers (late type).
4 Inserted tooth 28" saws.
1 30" Straight knife grinder.
1 Portland Iron Works power setworks, new.
1 Berlin self-feed table rip saw.
1 Diamond No. 35 Hog.
1 Diamond No. 45 hog.
1 Diamond No. 65 Hog.
1 Mill 12" slab woodsaw complete.
1 4 block 72" Sumner screw block—carriage.
1 #3 Reeves drive.
1 5-ton, 50' boom electric stiff-leg crane.
11 10"x30" cast screw rolls.

USED CHAIN
(Malleable)

No's. 78-81-124-480

Camelback No. 130
(Roller Chain)

No's. 60-80-100-120-140-160
Large Stock Sprockets

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8 D8s, drum and blade.
4 TD18s, drum and blade.
3 TD9s, drum and blade.
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3 axle and maxie.
Lorraines and link belts.
Shovels, ⅜ yd. to 3 yds., ready to go.

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12x14 Willamette, 400 ph.
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From 3 to 300 ph.

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Koehler Light Plants

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1 10 Ton Gantry Crane, 50 ft. span, 30 ft. lift, 150 F.P.M. 440 V. AC Travel Motors.
1 Sturtevant Steam Generator, 50 K.W., D.C. 115 Volt, 435 AMP.
1 Lot, New Shelby Tubing, 3¼" O.D. x 2¾" I.D.
1 Lot Stainless Steel, bar, type #302, 2½" dia.
2 Westinghouse Air Comp., Locomotive type, 150 P.S.I.
1 120 H.P. Fairbanks Morse Marine Deisel Recond., 1200 RPM.
3 to 1 Red. (Condensor)
1 Lot ¾" Brass Tubing.
Large Quantity Miscellaneous Steam Gauges—New.
1 10 ft. Allis Band Mill.
1 84" Mershon Resaw, left hand.
1 Allis-Chalmers Pacific Coast Type 78" Carriage 4-block, 8 sets trucks, 16 wheels, 3 7/16" axles, 4 sets Allis offsets, No. 4 Trout setworks. Steel carriage frame.
1 54" Allis R & P Headblocks, Trout Set.
1 66" Allis, 4-block, screw type, Trout Set.
1 6" x 54" Ball Bearing Stub Edger.
1 Bradley Power Hammer, 80-lb.
1 200 HP, 514 RPM, 60-cycle, 2300-volt, squirrel cage motor and starter.
1 Lodge & Shipley Lathe, 14" x 5', quick change.
1 No. 45 Diamond Hog.
3 300 KW Generators, 120 volts, DC, New.
1 Baby Simonson Log Turner, 2 Cylinder, New.
1 Gardner Denver Compressor, 65 ft. capacity.
1 Gardner Denver Compressor, 125 cu. ft.
1 12" BT & B RH Band Saw Grinder.
1 6" BT & B RH Band Saw Grinder.
1 Lot of Used Chain, all sizes.
1 Lot of Cast Pulleys.
1 Used Line Bar Rip and Split 54" Band Resaw, complete.
1 75 HP Slip Ring, 600 RPM, 220/440 Volt Motor.
1 80 Ton Overhead Bridge Crane, 59' Span, 58' lift. AC current, single hook, cab operated.

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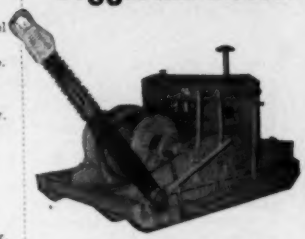

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1—Log Stop and Loader 5 15/16x32 4 arm 16x30.
2—Heavy Duty Belt Driven Canting Gears.
1—Allis Carriage 3 block 72"—screw type.
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1—6' RH Diamond Band Mill. Convert for resaw operation with line bar.
1—Shop made automatic random length trimmer, 11 saw, prefabricated package unit, available for immediate delivery.
1—Woods No. 110 6x12 Moulder complete W/motor and starter and feed table.
1—New Heaps Circular Resaw with air cylinder, foot control valve, compressor and 34" IP saw.

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HEADRIGS
1—Lane cast iron frame top and bottom arbor, 54".
1—Top arbor only, complete with bearings—2 11/16"x24".
1—Bottom arbor only, complete with bearings—2 15/16"x28".
1—Top and bottom 60" circular.
3—New American Top saw rigs.

DECK EQUIPMENT
1—3 arm log stop and loader
1—8"x10" oscillating Hill type Steam Nigger.
1—Belt driven cable log haul.
4—Belt driven overhead canting gears.

CARRIAGES
1—3-block rack and pinion, 48" opening. Anti-friction bearings, 7 sets trucks.
1—Filer & Stowell—3-block 44" rack and pinion steam setworks. (Can furnish hand or electric setworks). With rails.
1—Wood frame—10' long—3 screw blocks 60" opening, 4 sets wheels, 12" diameter, 2 15/16 axles, rope and friction drive setworks.
1—Wood frame—10'—3 rack and pinion block—56" opening, hand set, spring receder, 4 sets wheels, with 1 flat rail and 1 V-rail.

CARRIAGE FEEDS
1—P & H 10"x12" twin direct drive with 20"x15" drum for 3/4" cable.
New Soule Twin Engines.

EDGERS
1—Wheland 8"x96" L.H. 7-saw table type.
1—Wheland 4"x24" L.H. 3-saw table type.
1—Prescott 8"x60", 4-saw Pac. Cst. stub type.
1—Tower 3"x27", 2-saw table, new.
2—New Tower 5"x42" 3-saw Table type.
1—Tower 4"x36" 3-saw.

ROUTERS
1—Unit—Portable Router.
1—Kelly—heavy duty with stair attachment.
1—Onsrud Wall Mount Type, 1¼ H.P., 14,750 RPM
1—Onsrud Wall Mount Type, 5 H.P., 14,830 RPM.

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Large stocks available.

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2—Tower, new, 2-saw, 20'.
New Irvington automatic and selective random length.
Used 43C Irvington 11 saw.

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New "All Steel" No. 35, No. 45, No. 60.

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1—Davis & Wells 20"—1 H.P., 220/440 V.
1—American 36", V-belt drive with 2 H.P. motor.
1—American 32", V-belt drive.

RADIAL ARM SAWS
1—Monarch Unipoint Model XMA, 5 H.P., 3-60-220/440 V. motors with tables. New.
1—Comet, Model J—1 H.P., 3-60-220.
1—Dewalt, 1½ H.P., 100-220 volt.

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1—Davis & Wells 1.5 H.P., 220/440 V.
1—Shopmade Single Spindle, 2 H.P. Motor.
1—F & E double spindle, motor driven, 5x7½ H.P., 3-60-220/440.

JOINTERS
1—Crescent 8" round head.
1—Berlin 16" round head.

SANDERS
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1—Berlin Royal Invincible 72"—3 roll spiral.
1—Yates No. 401, 36", 3-Drum Roll Feed, Motorized.
1—6" Motorized Shop Made Belt Sander.
1—No. 206 Jefferson endless belt sander.

MOULDERS
1—American 6"x12" babbitt bearing 4 head belt drive.
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1—Levi Huston 4x8 round BD. Rebuilt.
1—Yates 100, 6"x10" moulder, 6K, with top and bottom profiles with hoods, belts, jointers and motors.
1—Woods No. 131 9"x6", 4 head, round head, complete with motor.

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1—American No. 226-6K, 36"x34" planer.
1—Woods 404B-8K, 6"x15" motorized sideheads, top and bottom profile, feed table and motor.
1—Woods No. 10 heavy duty, 12"x30" sq. hd., rebuilt
1—Berlin No. 41, heavy duty, 14"x30" sq. head, rebuilt.
1—American Sweepstakes, 6"x26" sq. head, with motors, belts, heads and blower.

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New G.M. Co.—all steel—ball bearing.

RESAWS
1—American No. 6 circular.

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1—American No. 1 double end trim saw—8" to 78"
1—American No. 11—8aw and dado machine.
1—New Darra James 19" tilting arbor.
1—Greenlee No. 451 saw and dado machine. New American tilting arbor, 9". New American tilting table, 8". New Shopmaster tilting table saws.
1—Rentle Push rip-table, 36x60 with 7½ H.P. motor.

SURFACERS
1—Crescent 6"x24" — 4 knife — round head — belt driven.
1—Smith 8x24" single surfacer with 7½ H.P. motor

SASH AND DOOR
1—American U14 sash clamp.
1—Motorized equaliner saw
1—Pitch Seam cutter.

MORTISERS
1—New Britain chain mortiser.
1—American hollow chisel mortiser.
1—R. & H. relisher and mortiser.

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1—Newman single end tenoner with motor.
1—Hapes double end tenoner with motorized copes, cutoff saws and tenoner head, 7'3" arms with 35 H.P. motor.

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2—Fisher Bar board matchers.
2—Woods semi-automatic box board cutoffs.
1—Doig—12-track—51"—open back.
1—Doig No. 42 C—10 track closed back nailer.
1—Morgan No. 6 closed back 6 track nailer.
1—Morgan No. 8 closed back, 8 track nailer.
1—Ames Harris Single Color Printer.
1—Connell & Dengler Single Color Printer.

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- TOWER Edgers and 2-Saw Trimmers.
- DEPENDABLE Knife Grinding Equipment.
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- MILWAUKEE Electric and Air Tools.

RIP SAWS
1—Yates No. 281—44" band rip saw.
1—Sinker—Davis—self feed with gang arbor.

IRVINGTON SAWS — Used
6—Irvington motorized, 28" to 52" long with 14" x18" blade.
1—Irvington No. 35 cutoff saw with 3 H.P. motor.
1—Irvington No. 4 contractors saw.
1—Irvington No. 2 cutoff saw.
1—Irvington No. 12 Portable Electric saw.
1—Irvington No. 35 cutoff saw with 3 H.P. motor.

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1—Washington—12" to 66" capacity. Rebuilt
2—New Glaze—12" to 72" capacity.

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1—Covel Hanchett No. 46 S, Capacity 40 40".
1—Perkins capacity to 72".

BAND SAW GRINDERS
1—Covel Hanchett Left Hand with new improved ballbearing head, capacity to 16" saws.
1—Hanchett No. 240—motorized, capacity to 14".

AUTOMATIC BAND SAW GRINDERS
1—Cove. No. 66L 1" to 7"—Rebuilt.
1—Covel No. 136L 4" to 12"—Rebuilt.
1—Covel No. 100R 4" to 16"—Rebuilt.

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1—Glaze 18"—New.
1—Glaze 8"—Belt Driven—Motorized.

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1—Covel 32"—12" Cap—Rebuilt.
1—Covel 42"—12" Cap—Rebuilt.

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Dependable No. 96A 36" Cup wheel knife grinder, motorized.
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Dependable No. 101A head grinder, motorized for heads up to 6" long 8" diameter.
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1—CIRCULAR HEAD RIG with 60" bottom saw and 56" top saw. Arbors: 4 7/16" bottom, 2 15/16" top, belt drive.

1—RIGHT HAND CARRIAGE, Sumner, 4 block, 60" opening with V-rail and No 4 Trout power set works. Complete with rail and wire rope.

1—PLANER, American No. 77A, Model 5, 6x15" with 75-HP electric motor.

1—HEAD GRINDER, Newman No. 71, bench type, with ¾-HP electric motor.

1—BLOWER SYSTEM with 45" Sturtevant fan, 30 HP electric motor and piping.

1—5 SAW SLASHER with 25 HP electric motor.

1—EDGER, Allis Chalmers, 10x72".

1—TRIM SAW, 48" Sumner Swing Saw, with 5 HP electric motor.

1—ELECTRIC MOTOR, 300 HP, GE, synchronous, 3 phase, 60 cycle, 440V, with base, pulley, starting compensator & exciter.

1—COMPRESSOR, Westinghouse, 10" with 24x30" receiver.

1—SAW GUMMER, 48", Covel.

1—SAW GUMMER, 64", Covel.

1—TWIN FEED ENGINE, Allis Chalmers, 12x18".

1—SKAGIT YARDER, 3-drum, type MHS, Mod. BU-110-CU.

1—DECK STOP & LOADER, 2-Arm.

2—BOILERS, horizontal, bubular, 200 HP, 72" diameter, 18' length, (1-code).

1—STEAM ENGINE, 20x26".

1—TWIN STEAM ENGINE, 11x14".

1—FEED WATER SYSTEM, including one 1" pump with electric motor; 2 steam pumps, and 1000-gallon steel tank.

1—CHAIN CUT OFF SAW, 34" with 5 HP electric motor.

1—CORLEY CARRIAGE, 16', complete with saw husk and rails — without power unit.

1—BRIDGE CRANE, 5-ton, 47'3" span, electric.

1—KNIFE GRINDER, Rogers, type 26/60, cabinet base, 32" capacity with 2-HP electric motor.

2—FIRE PUMP UNITS with gas engines, water pipe, hydrants, etc.

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1—72"x18' Code Her. Tubular 150 lbs.
1—Atlas 11"x14" center crank engine
1—14x18 H S & G sidecrank, 96x20 pulley LH
2—9x10 Ames City crank engine
1—10x12 Ames City crank engine
1—13x16 C&T Twin engine 70x20 pulley
1—16x20 H S & G twin engine
1—11x13 Willamette twin engine
1—14"x18" LH Russell 4-valve aut. 72"x16 flywheel.

NEW WORTHINGTON COMPRESSORS

1—new Worthington M25 142 cu. ft. compressor, 3-stage air cooled, 25 HP motor, V-belt drive
1—new Worthington M40 194 cu. ft. 40 HP V-belt drive

Complete stock of smaller new Worthington compressors.

1—used Ingersol-Rand 145 ft. Her. belt drive Air Compressor

PUMPS

Complete stock new Worthington Centrifugal Pumps
1—new Worthington 3x2x3 Duplex
1—new Worthington 3½x2¼x4 Duplex
1—new Worthington 4½x2¾x4 Duplex
1—new Worthington 5¼x3½x5 Duplex
1—new Worthington 7½x5x6 Duplex
1—used Gardner 6x4x6 Duplex outside center packed
1—used Blake 4½x2x4 outside End Packed (pot valve pattern) 175# steam 350# water pressure
1—used Smith Vaile 8x6x8 Duplex 3" suction, 2" discharge

HOISTS

1—4x4½ twin reversing drum 5'x11"
1—5"x6" twin reversing drum
1—7x12 dbl. cyl. reverse throttle, single drum engine
1—8¼x8 dbl. cyl. reverse throttle engine
1—6x6 twin engine, reverse throttle
1—8¼x8 dbl. cyl. sgl. drum hoist
1—new Electric dbl. Drum Hoist, 25 HP DC motor triple Compound, grooved Drums, line speed 40 ft. line pull 18,000 pounds

HOGS AND CHIPPERS

1—Diamond #25 babbitt bearing, steel rotor (used)
1—Brinkley 42" Chipper babbitt bearing, 4-knife 9x11 opening
1—Diamond No. 40 hog, babbitt bearing, 17¾x19" opening, 48" rotor
1—rotor for No. 1 Phoenix hog 43"x23"
1—new Diamond No. 25 Roller bearing hog
1—new Diamond No. 35 Roller bearing hog
1—new Diamond No. 45 Roller bearing hog
1—Mitts and Merrill 15CF Chipper and Shredder, 6-ton capacity, opening 46"x20"
1—Mitts and Merrill No. 10 Paper Shredder, cap. 200#, ⅛"; 400# ¼"
1—#35 Diamond anti-friction bearings—$2000.00.
1—#45 Diamond babbitt bearing—$2750.00.

DRAG SAWS

1—Multnomah 7"x44" direct steam
1—new 24" Electric Drag Saw

CARRIAGES

1—new Wheland #7 carriage rack and pinion, woodwork 20', 4½x6 timbers, track centers 54½", 3 blocks, 44" opening with tapers on knees, max. opening with tapers out 47½", std. dogs dbl. acting setworks, spring recede, 2-3/16 set shaft, 6 trucks, 10" V and flat wheels, 1-11/16" axles, 60 ft. 16# V rail, 16# flat rail
1—used Carriage, 3 54" R&P Cl blocks, lightweight, 3 CH dogs, 1 Knight dog, dbl. acting setworks, spring recede, 20' woodwork, 5 trucks, 9" V and flat wheels, 1-15/16 axles track centers, 54"; 75' 16# V track, 75' 16" flat track, woodwork 20' long
1—set 3—54" screw blocks, H6 Portland Iron Works, dbl. I-beam, no plates, 1-15/16 screws, 1-15/16 set shaft, 2 end blocks, taper knees, boss dogs, center block solid knee, hammer dog dbl. acting hand setworks, power recede, 6 sets trucks, 12" steel V and flat wheels, 2-3/16 axles, 60' 30# V rail, 60' 30# flat rail
1—Allis 4-block 72" carriage, #5 Trout Set
1—used Trout #4 Aut. Power Set Works
1—Andrus Power Set Works
1—Log Stop, 4-7/16 shaft, 4 arms, 14x17 cylinder
1—10 and 12x5 ft. full oscillating nigger
500 ft. #102 sawdust chain
400 ft. 1x6x½ conveyor chain
400 ft. 1¼x6x1½ conveyor chain
200 ft. 1½x6x1½ conveyor chain
new ¾-⅞" and 1" long link conveyor chain
New 60, 74, 78, 82 and 124 chain
200 ft. #110 sawdust chain
387 ft. #RW131 (#82) steel sidebar chain
103 ft. 1⅜"x8 Log Haul chain

EDGERS

1—new Wheland 3"x34" 3-saw roller bearing
1—new Wheland 4"x44" 4-saw roller bearing
1—used P. I. Works 6"x48" 4-saw stub lever
1—3-saw lath bolter, 3 20" IT saws
2—shingle knee bolters, 60" IT saws
1—Shake splitting machine, belt drive
1—New 6"x48" 4-saw stub edger, ball bearings, 10" saws.

STEAM FEEDS

1—4½x5 twin feed
1—5x6 twin feed
1—new 5x6 SpeeD twin feed
1—5x7 twin feed
1—8¼x8 twin feed
1—10"x42 ft. shotgun feed

RESAWS

1—Berlin #260 30" circular motor driven
1—American 24" circular motor driven
1—Cordesman 30" circular belt drive, cap. 12" vertical, rolls open 8"
1—Cordesman 42" band Resaw, 8" opening, babbitt bearings, 25 HP motor, V-belt drive
1—Fay and Egan 30" Circular Resaw, BB arbor, tilting rolls.
1—Marshon 54" LH Vertical band Resaw, tilting rolls, 8" opening, babbitt bearings, 40 HP motor.

PLANERS, SURFACERS & MOULDERS

1—Berlin 10"x30" 4-side Sq. Heads, 2 sets sideheads, divided rolls #46
1—American 7" 4-side square head Moulder
1—American #22 10" 4-side square head Moulder
1—American #505 10" 4-side square head Moulder
1—Berlin #177 12"x30" dbl. Surfacer, 3 knife heads
1—F&E 6" 4-side Moulder
1—H&B 8" 4-side Moulder
1—American #4½ 30"x7 2-knife surfacer sec. infeed rolls
1—Berlin 6"x24" 2-knife surfacer, sec. infeed rolls
1—Cordesman 8"x26" 2-knife surfacer, sec. infeed rolls
1—Berlin #256 6" cap., table 39"x72" belt drive.
1—Berlin #94 6"x15" 6-knife Matcher, rebuilt.
1—Berlin #16 16"x30" 6-knife Timber Sizer.

RIP SAWS

1—Madison #207 straight line ripsaw, 15 HP 3600 mater
1—Greenlee self-feed rip saw, table 42"x69"

PLANER KNIFE GRINDERS

1—used Bridgeport 60" cap. 26x1½ wheel
1—new Dependable #99A 36" motor drive, semi-automatic
1—new Dependable #99A 36" motor drive, full automatic
1—new #101A sidehead Grinder, motor drive
1—new #102A sidehead and profile grinder, motor drive

FILING ROOM EQUIPMENT

1—Hanchett #207 -8 LH band saw grinder
1—Covel #130 12" RH bandsaw grinder, motor drive
1—Covel #120 10" LH bandsaw grinder, motor drive
1—new 10" RH motor drive bandsaw grinder
1—Hanchett 12" RH bandsaw grinder
1—Covel #118 16" RH bandsaw grinder
1—Covel #150 RH 16" bandsaw grinder, BB arbor
1—Covel #736 38" Aut. Cir. Saw Grinder
1—Hanchett #784 84" aut. cir. saw grinder
1—new Collis Hand Gummer cap. to 40"
1—Acme Hand Gummer 5" to 60", motor drive ⅓ HP

500 used Dry Kiln Trucks, 48", 8" wheels, 3" channels.

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